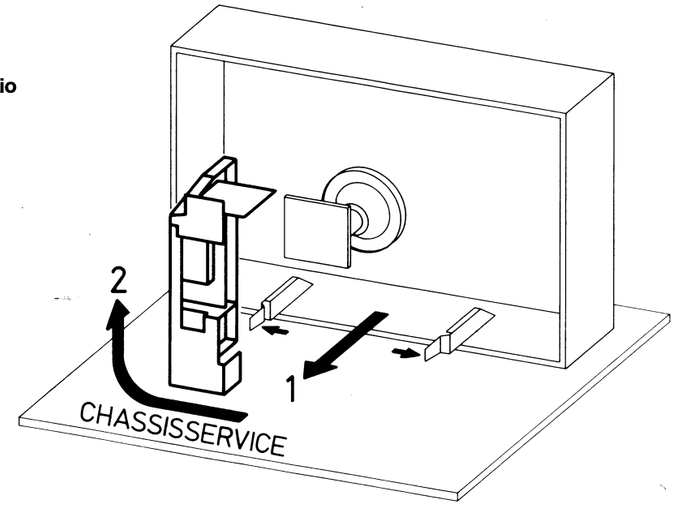
**Servicestellung**
**Service position**
**Posizione di servizio**




# GRUNDIG

Color

Ⓓ Btx * 32700 #

# SERVICE MANUAL
# CUC 3600/3800

**VERS. A:**
**GER. MIT SYMM. GEHÄUSE**
**SETS WITH SYMM. CABINET**
**APP. CON MOBILE SIMMETRICO**

| | |
|---|---|
| **M 63-370 CTI** | **(9.25284-01)** |
| **M 63-370 CTI/text** | **(9.25284-02)** |
| **M 70-390/9** | **(9.25280-01)** |
| **M 63-370 CTI/GB** | **(9.25284-63)** |
| **M 70-390 CTI/GB** | **(9.25409-63)** |
| **M 70-390/9 text** | **(9.25280-02)** |
| **M 70-396 CTI-PC** | **(9.25408-01)** |
| **M 70-390/9 text** | **(9.25280-06)** |
| **M 63-370 CTI/text** | **(9.25284-06)** |

**VERS. B:**
**GER. MIT WÜRFELGEHÄUSE**
**SETS WITH CUBE CABINET**
**APP. CON MOBILE A CUBO**

| | |
|---|---|
| **M 70-395 CTI** | **(9.25289-01)** |
| **M 63-375/9** | **(9.25440-01)** |
| **M 63-375 CTI/GB** | **(9.25264-63)** |
| **M 70-395 CTI/GB** | **(9.25289-63)** |
| **M 70-395 CTI/text** | **(9.25289-02)** |
| **M 63-375/9 text** | **(9.25440-02)** |
| **M 70-395 CTI/text** | **(9.25289-06)** |
| **M 63-375 CTI/text** | **(9.25264-06)** |

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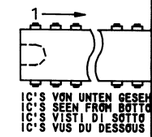
Service Manual CUC 3600/3800 Sach-Nr. 72010-000.70
Service manual CUC 3600/3800 Order-No. 72010-000.70

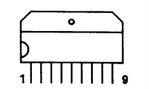


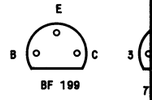

**Symbole und ihre Bedeutung**
**Symbols and their meaning**
**Simboli e loro significati**

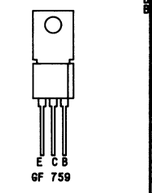
| | | | |
|---|---|---|---|
| P — PROGR. | VERT. — VERT. TASTIMPULS<br>VERT. GATING PULSE<br>IMP. A CADENZA VERT.<br>IMP. TRAME | $U_{H}$ — HOCHSPANNUNG<br>EHT VOLTAGE<br>ALTA TENS.<br>HAUTE TENS. | ZEILENBREITE<br>LINE WIDTH<br>LARGHEZZA DI RIGA<br>AMPLITUDE HORIZONTALE |
| P1 — PROGR. TASTE<br>PROGR. BUTTON<br>TASTO PROGR.<br>TOUCHE PROGR. | VERT. — VERT. PARABEL<br>VERT. PARABOLA<br>PARABOLA VERT.<br>SIGNAL PARABOLIQUE | $U_{SG}$ — SCHIRMGITTERSP.<br>SCREEN-GRID VOLT.<br>TENS. GRIGLIA SCHERMO<br>TENS. GRILLE-ECRAN | OST / WEST AMPLITUDE<br>EAST / WEST AMPLITUDE<br>AMPIEZZA EST / OVEST<br>AMPLITUDE EST / OUEST |
| M — SPEICHERTASTE<br>MEMORY BUTTON<br>TASTO DI MEMORIA<br>TOUCHE MEMOIRE | VERT. — VERT. SAEGEZAHN<br>VERT. SAW TOOTH<br>DENTE DI SEGA VERT.<br>SIGNAL DENT DE SCIE | TE — TEXT ENABLE | HOR. LINEARITAET<br>HORIZ. LINEARITY<br>LINEAR. ORIZZ.<br>LINEAR. HORIZONT. |
| NORM — NORMTASTE<br>TV STANDARD SELECT. BUTTON<br>COMMUT. DI NORMA<br>TOUCHE DE NORME | HOR. — HOR. ANSTEUERUNG<br>HORIZ. DRIVE<br>PILOTAGGIO ORIZZ.<br>SYNCHR. LIGNES | SCL — $I^2C$-CLOCK | BILDLAGE HOR.<br>HORIZ. PICTURE POSITION<br>POSIZIONE ORIZZ. D'IMMAGINE<br>CADRAGE HORIZONT. |
| ▷▷+ — FEINABST. +<br>FINE TUNING +<br>SINT. FINE +<br>REGLAGE FIN + | REF. — REF. IMPULS<br>REFERENCE PULSE<br>IMP. DI RIFER.<br>IMP. DE REFER. | VCL — VCR-CLOCK | FOKUSREGLER<br>FOCUS CONTROL<br>REGOLAT. DI FOCALIZZ.<br>REGLAGE DE FOCALISATION |
| -◁◁ — FEINABST.-<br>FINE TUNING -<br>SINT. FINE -<br>REGLAGE FIN - | SCHUTZSCHALTUNG<br>CIRCUIT PROTECTION<br>CIRCUITO DI PROTEZIONE<br>CIRCUIT DE SECURITE | ICL — I-BUS-CLOCK | BILDLAGE VERT.<br>VERT. PICTURE POSITION<br>POSIZ. VERT. D'IMMAGINE<br>CADRAGE VERTICAL |
| SUCHLAUF BD I<br>SELF-SEEK BAND I<br>SINT. AUTOM. BANDA I<br>RECHERCHE AUTOM. BANDE I | FARBTON<br>TINT<br>TINTA<br>TEINTE | SDA — DATEN<br>DAT<br>DATI<br>DONNEES | BILDAMPLITUDE<br>FIELD AMPLITUDE<br>AMPIEZZA D'IMMAGINE<br>AMPLITUDE VERTICALE |
| III — SUCHLAUF BANDWAHL III<br>SELF-SEEK BAND III<br>SINT. AUTOM. BANDA III<br>RECHERCHE AUTOM. BANDE III | REF. — REF. LAUTSTAERKE<br>VOLUME REF. VOLT.<br>TENS. DI RIF. VOLUME<br>TENS. DE REF. VOL. SONORE | ZF — ZF-SIGNAL<br>IF SIGNAL<br>SEGNALE FI<br>SIGNAL FI | TRAPEZ<br>TRAPEZIUM<br>TRAPEZIO<br>TRAPEZE |
| UHF — SUCHLAUF UHF<br>SELF-SEEK UHF<br>SINT. AUTOM. UHF<br>RECHERCHE AUTOM. UHF | HELLIGKEIT<br>BRIGHTNESS<br>LUMINOSITA'<br>LUMINOSITE | PP — PAL PRIORITAET<br>PAL PRIORITY<br>PRIORITA' PAL<br>PRIORITE PAL | HOR. FREQUENZ<br>HOR. FREQUENCY<br>FREQ. ORIZZ.<br>FREQ. HORIZ. |
| LAUTSTAERKE<br>VOLUME<br>VOLUME SONORE | KONTRAST<br>CONTRAST<br>CONTRASTO<br>CONTRASTE | F-DIR. — F-SIGNAL DIREKT<br>F SIGNAL DIRECT<br>SEGNALE F DIRETTO<br>SIGNAL CHROMA DIRECT | VERT. FREQUENZ<br>VERT. FREQUENCY<br>FREQ. VERT. |
| FT — FEINABST.<br>FINE TUNING<br>SINT. FINE<br>REGLAGE FIN | FARBKONTRAST<br>CONTRAST COLOUR<br>CONTRASTO COLORE<br>CONTRASTE COULEUR | $F_V$ — FV-SIGNAL<br>FV SIGNAL<br>SEGNALE FV<br>SIGNAL FY | VERT. LINEARITAET<br>VERT. LINEARITY<br>LINEAR. VERT.<br>LINEAR. VERT. |
| C — KANALWAHL<br>CHANNEL SEL.<br>SELEZ. CANALE<br>SELECT. DE CANAUX | FBAS — FBAS-SIGNAL<br>CCVS SIGNAL<br>SEGNALE SVCC<br>SIGNAL VIDEO COMPOSITE | $F_U$ — FU-SIGNAL<br>FU SIGNAL<br>SEGNALE FU<br>SIGNAL FX | OST/WEST SYMMETRIE<br>EAST/WEST SYMMETRY<br>SIMMETRIA EST/OVEST<br>SYMMETRIE EST/OUEST |
| BALANCE<br>BILANCIAM.<br>BALANCE | SSC — SUPERSANDCASTLE | F-VERZ — F-SIGNAL VERZOEGERT<br>F SIGNAL DELAYED<br>SEGNALE F RITARD.<br>SIGNAL CHROMA RETARDE | |
| SUCHLAUF<br>SELF-SEEK<br>SINT. AUTOM.<br>RECHERCHE AUTOM. | SB — STRAHLSTR. BEGR.<br>BEAM CURRENT LIM.<br>CORRENTE CATODICA MEDIA<br>LIM. COUR. DE FAISCEAU | DL — VERZOEGERUNGSLEITUNG<br>DELAY LINE<br>LINEA DI RITARDO<br>LIGNE A RETERD | |
| $U_{T/M}$ — SCHALTSP. BANDWAHL<br>BAND SEL. SWITCHING VOLTAGE<br>TENS. DI COMMUT. SELEZ. BANDA<br>TENS. DE COMMUT. SELECT. BANDE | SSB — SPITZ. STRAHLSTR. BEGR.<br>PEAK BEAM CURRENT LIMITING<br>CORR. CATODICA DI PICCO<br>LIM. DE FAISCEAU CRETE | $U_{SCHUTZ}$ — SCHALTSP./SCHUTZFUNKTION<br>SWITCHING VOLT. /PROTECTIVE FUNCTION<br>TENS. DI COMMUT. /FUNZ.DI PROTEZ.<br>TENS. DE COMMUT. / SECURITE | |
| $U_{VHF}$ — SCHALTSP. VHF<br>SWITCHING VOLT. VHF<br>TENS. DI COMMUT. VHF<br>TENS. DE COMMUT. VHF | R — ROT-SIGNAL<br>RED SIGNAL<br>SEGNALE ROSSO<br>SIGNAL ROUGE | FBAS SYNC. — FBAS/SYNC.-SIGNAL<br>CCVS/SYNC. SIGNAL<br>SEGNALE SINCR. /VIDEO COL. COMPOSITO<br>SIGNAL SYNC./VIDEO COMPOSITE | |
| $U_{UHF}$ — SCHALTSP. UHF<br>SWITCHING VOLT. UHF<br>TENS. DI COMMUT. UHF<br>TENS. DE COMMUT. UHF | G — GRUEN-SIGNAL<br>GREEN SIGNAL<br>SEGNALE VERDE<br>SIGNAL VERT | SYNC. — SYNC.-SIGNAL<br>SYNC. SIGNAL<br>SEGNALE SINCR.<br>SIGNAL SYNC. | |
| $U_{AFC}$ — SCHALTSP. AFC<br>SWITCHING VOLT. AFC<br>TENS. DI COMMUT. AFC<br>TENS. DE COMMUT. AFC | B — BLAU-SIGNAL<br>BLUE SIGNAL<br>SEGNALE BLU<br>SIGNAL BLEU | $U_{50/60HZ}$ — SCHALTSP. 50/60HZ<br>SWITCHING VOLT.50/60HZ<br>TENS. DI COMMUT. 50/60HZ<br>TENS. DE COMMUT. 50/60HZ | |
| $U_{AV}$ — SCHALTSP. AV<br>AV SWITCHING VOLT.<br>TENS. DI COMMUT. AV<br>TENS. DE COMMUT. AV | Y — Y-SIGNAL<br>SEGNALE Y<br>SIGNAL Y | $U_{BTX}$ — SCHALTSP. BTX<br>SWITCHING VOLT. BTX (VIEWDATA)<br>TENS. COMMUT. VIDEOTEL<br>TENS. COMMUT. VIDEOTEXTE | |
| $U_{NORM}$ — SCHALTSP. NORM<br>SWITCHING VOLT. STANDARD<br>TENS. DI COMMUT. NORMA<br>TENS. DE COMMUT. STANDARD | F — F-SIGNAL<br>CHROMA SIGNAL<br>SEGNALE F<br>SIGNAL CHROMA | SYNC. VT — SYNC. VT<br>SYNC. VT (TELETEXT)<br>SINCR. TELEVIDEO<br>SYNC. TELETEXTE | |
| $U_{KOINZ.}$ — SCHALTSP. KOINZ.<br>SWITCHING VOLT. COINC.<br>TENS. DI COMMUT. COINC.<br>TENS. DE COMMUT. COINC. | SW — SCHWARZWERT<br>BLACK LEVEL<br>LIVELLO DEL NERO<br>NIVEAU DU NOIR | SYNC. BTX — SYNC. BTX<br>SYNC. BTX (VIEWDATA)<br>SINCR. VIDEOTEL<br>SYNC. VIDEOTEXTE | |
| $U_{EURO-AV}$ — SCHALTSP. EURO-AV<br>SWITCHING VOLT. EURO-AV<br>TENS. DI COMMUT. EURO-AV<br>TENS. DE COMMUT. NORME FR | AUDIO — AUDIO-SIGNAL<br>SEGNALE AUDIO<br>SIGNAL AUDIO | $U_{RESET}$ — SCHALTSP. RESET<br>SWITCHING VOLT. RESET<br>TENS. COMMUT. RESET | |
| $U_{VQ}$ — SCHALTSP. VIDEO QUELLE<br>SWITCHING VOLT. VIDEO SOURCE<br>TENS. DI COMMUT. SORG. VIDEO<br>TENS. DE COMMUT. SOURCE VIDEO | AUDIO-L — AUDIO SIGNAL LINKS<br>AUDIO SIGNAL LEFT<br>SEGNALE AUDIO SINISTRA<br>SIGNAL AUDIO GAUCHE | $U_{STRMD}$ — SCHALTSP. STAND BY<br>SWITCHING VOLT. STAND BY<br>TENS. COMMUT. STAND BY<br>TENS. COMMUT. VEILLE | |
| $U_{DATA}$ — SCHALTSP. DATENBETR.<br>SWITCHING VOLT. DATA MODE<br>TENS. DI COMMUT. DATI<br>TENS. DE COMMUT. FONCT. DONNEES | AUDIO-R — AUDIO SIGNAL RECHTS<br>AUDIO SIGNAL RIGHT<br>SEGNALE AUDIO DESTRA<br>SIGNAL AUDIO DROIT | $U_{HUB}$ — SCHALTSP. HUB<br>SWITCHING VOLT. DEVIATION<br>TENS. COMMUT. DEVIAZIONE<br>TENS. COMMUT. DEVIATION | |
| $U_{4,5MHZ}$ — SCHALTSP. 4,5 MHZ<br>SWITCHING VOLT. 4,5 MHZ<br>TENS. DI COMMUT. 4,5 MHZ<br>TENS. DE COMMUT. 4,5 MHZ | EURO-AV VIDEO — VIDEO SIGNAL EURO-AV<br>SEGNALE VIDEO EURO-AV<br>SIGNAL VIDEO NORME FR | $U_{DEEM}$ — SCHALTSP. DEEM<br>SWITCHING VOLT. DEEMPHASIS<br>TENS. COMMUT. DEENFASI<br>TENS. COMMUT. DESACCENT. | |
| $U_{\tau}$ — REGELSP. VERZOEGERT<br>DELAYED CONTR. VOLTAGE<br>TENS. DI CONTR. RITARD.<br>TENS. DE REGUL. RETARDEE | EURO-AV AUDIO-R — AUDIO SIGNAL EURO-AV RECHTS<br>AUDIO SIGNAL EURO-AV RIGHT<br>SEGNALE AUDIO EURO-AV DESTRA<br>SIGNAL AUDIO NORME FR DROIT | $U_{CAM\ AV}$ — SCHALTSP. KAMERA WIEDERG.<br>SWITCHING VOLT. CAMERA PLAYBACK<br>TENS. COMMUT. RIPRODUZ. TELECAMERA<br>TENS. COMMUT. REPROD. CAMERA | |
| $U_{TUN.}$ — ABSTIMMSP. TUNER<br>TUNING VOLT. TUNER<br>TENS. DI SINTONIA TUNER<br>TENS. D'ACCORD TUNER | EURO-AV AUDIO-L — AUDIO SIGNAL EURO-AV LINKS<br>AUDIO SIGNAL EURO-AV LEFT<br>SEGNALE VIDEO EURO-AV SINISTRA<br>SIGNAL AUDIO NORME FR GAUCHE | $U_{LED}$ — SCHALTSP. LED<br>LED SWITCHING VOLT.<br>LED TENS. DI COMMUT.<br>TENS. DE COMMUT. LED | |
| $U_{AFC}$ — REGELSP. AFC<br>AFC CONTROL VOLT.<br>TENS. DI CONTR. AFC<br>TENS. DE REGUL. AFC | IR — IR-SIGNAL<br>SEGNALE IR<br>SIGNAL IR | | |
| $U_{MUTE}$ — STUMMSCHALTUNG<br>MUTING<br>SILENZIAMENTO<br>SILENCIEUX | $U_{G1}$ — SPG. GITTER 1<br>VOLTAGE GRID 1<br>TENS. GRIGLIA 1<br>TENS. GRILLE G1 | | |
| TASTIMPULS<br>GATING PULSE<br>IMPULSO A CADENZA<br>IMPULS. DE DECLENCHEMENT | $U_{FOC}$ — FOKUSSP.<br>FOCUSSING VOLTAGE<br>TENS. DI FOCALIZZ.<br>TENS. DE FOCALIS. | | |

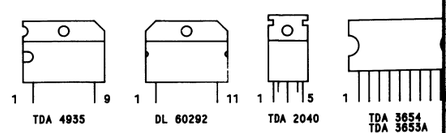
**Wichtige Sch**
**Important cir**
**Segni circuit**



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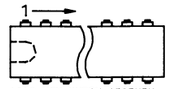
Sach-Nr. 72010-000.70
Order-No. 72010-000.70

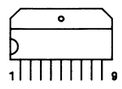

## Symbole und ihre Bedeutung
## Symbols and their meaning
## Simboli e loro significati

| | |
|---|---|
| P | PROGR. |
| P1 | PROGR. TASTE<br>PROGR. BUTTON<br>TASTO PROGR.<br>TOUCHE PROGR. |
| M | SPEICHERTASTE<br>MEMORY BUTTON<br>TASTO DI MEMORIA<br>TOUCHE MEMOIRE |
| NORM | NORMTASTE<br>TV STANDARD SELECT. BUTTON<br>COMMUT. DI NORMA<br>TOUCHE DE NORME |
| ▷▷+ | FEINABST. +<br>FINE TUNING +<br>SINT. FINE +<br>REGLAGE FIN + |
| -◁◁ | FEINABST.-<br>FINE TUNING -<br>SINT. FINE -<br>REGLAGE FIN - |
| I | SUCHLAUF BD I<br>SELF-SEEK BAND I<br>SINT. AUTOM. BANDA I<br>RECHERCHE AUTOM. BANDE I |
| III | SUCHLAUF BANDWAHL III<br>SELF-SEEK BAND III<br>SINT. AUTOM. BANDA III<br>RECHERCHE AUTOM. BANDE III |
| UHF | SUCHLAUF UHF<br>SELF-SEEK UHF<br>SINT. AUTOM. UHF<br>RECHERCHE AUTOM. UHF |
| | LAUTSTAERKE<br>VOLUME<br>VOLUME SONORE |
| FT | FEINABST.<br>FINE TUNING<br>SINT. FINE<br>REGLAGE FIN |
| C | KANALWAHL<br>CHANNEL SEL.<br>SELEZ. CANALE<br>SELECT. DE CANAUX |
| | BALANCE<br>BILANCIAM.<br>BALANCE |
| | SUCHLAUF<br>SELF-SEEK<br>SINT. AUTOM.<br>RECHERCHE AUTOM. |
| $U_{T/III}$ | SCHALTSP. BANDWAHL<br>BAND SEL. SWITCHING VOLTAGE<br>TENS. DI COMMUT. SELEZ. BANDA<br>TENS. DE COMMUT. SELECT. BANDE |
| $U_{VHF}$ | SCHALTSP. VHF<br>SWITCHING VOLT. VHF<br>TENS. DI COMMUT. VHF<br>TENS. DE COMMUT. VHF |
| $U_{UHF}$ | SCHALTSP. UHF<br>SWITCHING VOLT. UHF<br>TENS. DI COMMUT. UHF<br>TENS. DE COMMUT. UHF |
| $U_{AFC}$ | SCHALTSP. AFC<br>SWITCHING VOLT. AFC<br>TENS. DI COMMUT. AFC<br>TENS. DE COMMUT. AFC |
| $U_{AV}$ | SCHALTSP. AV<br>AV SWITCHING VOLT.<br>TENS. DI COMMUT. AV<br>TENS. DE COMMUT. AV |
| $U_{NORM}$ | SCHALTSP. NORM<br>SWITCHING VOLT. STANDARD<br>TENS. DI COMMUT. NORMA<br>TENS. DE COMMUT. STANDARD |
| $U_{COINV.}$ | SCHALTSP. KOINZ.<br>SWITCHING VOLT. COINC.<br>TENS. DI COMMUT. COINC.<br>TENS. DE COMMUT. COINC. |
| $U_{EURO-AV}$ | SCHALTSP. EURO-AV<br>SWITCHING VOLT. EURO-AV<br>TENS. DI COMMUT. EURO-AV<br>TENS. DE COMMUT. NORME FR |
| $U_{VQ}$ | SCHALTSP. VIDEO QUELLE<br>SWITCHING VOLT. VIDEO SOURCE<br>TENS. DI COMMUT. SORG. VIDEO<br>TENS. DE COMMUT. SOURCE VIDEO |
| $U_{DATA}$ | SCHALTSP. DATENBETR.<br>SWITCHING VOLT. DATA MODE<br>TENS. DI COMMUT. DATI<br>TENS. DE COMMUT. FONCT. DONNEES |
| $U_{4,5MHZ}$ | SCHALTSP. 4,5 MHZ<br>SWITCHING VOLT. 4,5 MHZ<br>TENS. DI COMMUT. 4,5 MHZ<br>TENS. DE COMMUT. 4,5 MHZ |
| $U_{T}$ | REGELSP. VERZOEGERT<br>DELAYED CONTR. VOLTAGE<br>TENS. DI CONTR. RITARD.<br>TENS. DE REGUL. RETARDEE |
| $U_{TUN.}$ | ABSTIMMSP. TUNER<br>TUNING VOLT. TUNER<br>TENS. DI SINTONIA TUNER<br>TENS. D'ACCORD TUNER |
| $U_{AFC}$ | REGELSP. AFC<br>AFC CONTROL VOLT.<br>TENS. DI CONTR. AFC<br>TENS. DE REGUL. AFC |
| $U_{MUTE}$ | STUMMSCHALTUNG<br>MUTING<br>SILENZIAMENTO<br>SILENCIEUX |
| | TASTIMPULS<br>GATING PULSE<br>IMPULSO A CADENZA<br>IMPULS. DE DECLENCHEMENT |
| VERT. | VERT. TASTIMPULS<br>VERT. GATING PULSE<br>IMP. A CADENZA VERT.<br>IMP. TRAME |
| VERT. | VERT. PARABEL<br>VERT. PARABOLA<br>PARABOLA VERT.<br>SIGNAL PARABOLIQUE |
| VERT. | VERT. SAEGEZAHN<br>VERT. SAW TOOTH<br>DENTE DI SEGA VERT.<br>SIGNAL DENT DE SCIE |
| HOR. | HOR. ANSTEUERUNG<br>HORIZ. DRIVE<br>PILOTAGGIO ORIZZ.<br>SYNCHR. LIGNES |
| REF. | REF. IMPULS<br>REFERENCE PULSE<br>IMP. DI RIFER.<br>IMP. DE REFER. |
| | SCHUTZSCHALTUNG<br>CIRCUIT PROTECTION<br>CIRCUITO DI PROTEZIONE<br>CIRCUIT DE SECURITE |
| | FARBTON<br>TINT<br>TINTA<br>TEINTE |
| REF. | REF. LAUTSTAERKE<br>VOLUME REF. VOLT.<br>TENS. DI RIF. VOLUME<br>TENS. DE REF. VOL. SONORE |
| | HELLIGKEIT<br>BRIGHTNESS<br>LUMINOSITA'<br>LUMINOSITE |
| | KONTRAST<br>CONTRAST<br>CONTRASTO<br>CONTRASTE |
| | FARBKONTRAST<br>CONTRAST COLOUR<br>CONTRASTO COLORE<br>CONTRASTE COULEUR |
| FBAS | FBAS-SIGNAL<br>CCVS SIGNAL<br>SEGNALE SVCC<br>SIGNAL VIDEO COMPOSITE |
| SSC | SUPERSANDCASTLE |
| SB | STRAHLSTR. BEGR.<br>BEAM CURRENT LIM.<br>CORRENTE CATODICA MEDIA<br>LIM. COUR. DE FAISCEAU |
| SSB | SPITZ. STRAHLSTR. BEGR.<br>PEAK BEAM CURRENT LIMITING<br>CORR. CATODICA DI PICCO<br>LIM. DE FAISCEAU CRETE |
| R | ROT-SIGNAL<br>RED SIGNAL<br>SEGNALE ROSSO<br>SIGNAL ROUGE |
| G | GRUEN-SIGNAL<br>GREEN SIGNAL<br>SEGNALE VERDE<br>SIGNAL VERT |
| B | BLAU-SIGNAL<br>BLUE SIGNAL<br>SEGNALE BLU<br>SIGNAL BLEU |
| Y | Y-SIGNAL<br>SEGNALE Y<br>SIGNAL Y |
| F | F-SIGNAL<br>CHROMA SIGNAL<br>SEGNALE F<br>SIGNAL CHROMA |
| SW | SCHWARZWERT<br>BLACK LEVEL<br>LIVELLO DEL NERO<br>NIVEAU DU NOIR |
| AUDIO | AUDIO-SIGNAL<br>SEGNALE AUDIO<br>SIGNAL AUDIO |
| AUDIO-L | AUDIO SIGNAL LINKS<br>AUDIO SIGNAL LEFT<br>SEGNALE AUDIO SINISTRA<br>SIGNAL AUDIO GAUCHE |
| AUDIO-R | AUDIO SIGNAL RECHTS<br>AUDIO SIGNAL RIGHT<br>SEGNALE AUDIO DESTRA<br>SIGNAL AUDIO DROIT |
| EURO-AV VIDEO | VIDEO SIGNAL EURO-AV<br>SEGNALE VIDEO EURO-AV<br>SIGNAL VIDEO NORME FR |
| EURO-AV AUDIO-R | AUDIO SIGNAL EURO-AV RECHTS<br>AUDIO SIGNAL EURO-AV RIGHT<br>SEGNALE AUDIO EURO-AV DESTRA<br>SIGNAL AUDIO NORME FR DROIT |
| EURO-AV AUDIO-L | AUDIO SIGNAL EURO-AV LINKS<br>AUDIO SIGNAL EURO-AV LEFT<br>SEGNALE VIDEO EURO-AV SINISTRA<br>SIGNAL AUDIO NORME FR GAUCHE |
| IR | IR-SIGNAL<br>SEGNALE IR<br>SIGNAL IR |
| $U_{G1}$ | SPG. GITTER 1<br>VOLTAGE GRID 1<br>TENS. GRIGLIA 1<br>TENS. GRILLE G1 |
| $U_{FOC.}$ | FOKUSSP.<br>FOCUSSING VOLTAGE<br>TENS. DI FOCALIZZ.<br>TENS. DE FOCALIS. |
| $U_H$ | HOCHSPANNUNG<br>EHT VOLTAGE<br>ALTA TENS.<br>HAUTE TENS. |
| $U_{SG}$ | SCHIRMGITTERSP.<br>SCREEN-GRID VOLT.<br>TENS. GRIGLIA SCHERMO<br>TENS. GRILLE-ECRAN |
| TE | TEXT ENABLE |
| SCL | $I^2C$-CLOCK |
| VCL | VCR-CLOCK |
| ICL | I-BUS-CLOCK |
| SDA | DATEN<br>DATA<br>DATI<br>DONNEES |
| ZF | ZF-SIGNAL<br>IF SIGNAL<br>SEGNALE FI<br>SIGNAL FI |
| PP | PAL PRIORITAET<br>PAL PRIORITY<br>PRIORITA' PAL<br>PRIORITE PAL |
| F-DIR. | F-SIGNAL DIREKT<br>F SIGNAL DIRECT<br>SEGNALE F DIRETTO<br>SIGNAL CHROMA DIRECT |
| $F_V$ | FV-SIGNAL<br>FV SIGNAL<br>SEGNALE FV<br>SIGNAL FY |
| $F_U$ | FU-SIGNAL<br>FU SIGNAL<br>SEGNALE FU<br>SIGNAL FX |
| F-VERZ | F-SIGNAL VERZOEGERT<br>F SIGNAL DELAYED<br>SEGNALE F RITARD.<br>SIGNAL CHROMA RETARDE |
| DL | VERZOEGERUNGSLEITUNG<br>DELAY LINE<br>LINEA DI RITARDO<br>LIGNE A RETERD |
| $U_{SCHUTZ}$ | SCHALTSP./SCHUTZFUNKTION<br>SWITCHING VOLT. /PROTECTIVE FUNCTION<br>TENS. DI COMMUT. /FUNZ.DI PROTEZ.<br>TENS. DE COMMUT. / SECURITE |
| FBAS SYNC. | FBAS/SYNC.-SIGNAL<br>CCVS/SYNC. SIGNAL<br>SEGNALE SINCR. /VIDEO COL. COMPOSITO<br>SIGNAL SYNC./VIDEO COMPOSITE |
| SYNC. | SYNC.-SIGNAL<br>SYNC. SIGNAL<br>SEGNALE SINCR.<br>SIGNAL SYNC. |
| $U_{50/60HZ}$ | SCHALTSP. 50/60HZ<br>SWITCHING VOLT.50/60HZ<br>TENS. DI COMMUT. 50/60HZ<br>TENS. DE COMMUT. 50/60HZ |
| $U_{BTX}$ | SCHALTSP. BTX<br>SWITCHING VOLT. BTX (VIEWDATA)<br>TENS. COMMUT. VIDEOTEL<br>TENS. COMMUT. VIDEOTEXTE |
| SYNC. VT | SYNC. VT<br>SYNC. VT (TELETEXT)<br>SINCR. TELEVIDEO<br>SYNC. TELETEXTE |
| SYNC. BTX | SYNC. BTX<br>SYNC. BTX (VIEWDATA)<br>SINCR. VIDEOTEL<br>SYNC. VIDEOTEXTE |
| $U_{RESET}$ | SCHALTSP. RESET<br>SWITCHING VOLT. RESET<br>TENS. COMMUT. RESET |
| $U_{STAND BY}$ | SCHALTSP. STAND BY<br>SWITCHING VOLT. STAND BY<br>TENS. COMMUT. STAND BY<br>TENS. COMMUT. VEILLE |
| $U_{HUB}$ | SCHALTSP. HUB<br>SWITCHING VOLT. DEVIATION<br>TENS. COMMUT. DEVIAZIONE<br>TENS. COMMUT. DEVIATION |
| $U_{DEEM}$ | SCHALTSP. DEEM<br>SWITCHING VOLT. DEEMPHASIS<br>TENS. COMMUT. DEENFASI<br>TENS. COMMUT. DESACCENT. |
| $U_{CAM AV}$ | SCHALTSP. KAMERA WIEDERG.<br>SWITCHING VOLT. CAMERA PLAYBACK<br>TENS. COMMUT. RIPRODUZ. TELECAMERA<br>TENS. COMMUT. REPROD. CAMERA |
| $U_{LED}$ | SCHALTSP. LED<br>LED SWITCHING VOLT.<br>LED TENS. DI COMMUT.<br>TENS. DE COMMUT. LED |
| | ZEILENBREITE<br>LINE WIDTH<br>LARGHEZZA DI RIGA<br>AMPLITUDE HORIZONTALE |
| | OST / WEST AMPLITUDE<br>EAST / WEST AMPLITUDE<br>AMPIEZZA EST / OVEST<br>AMPLITUDE EST / OUEST |
| | HOR. LINEARITAET<br>HORIZ. LINEARITY<br>LINEAR. ORIZZ.<br>LINEAR. HORIZONT. |
| | BILDLAGE HOR.<br>HORIZ. PICTURE POSITION<br>POSIZIONE ORIZZ. D'IMMAGINE<br>CADRAGE HORIZONTAL |
| | FOKUSREGLER<br>FOCUS CONTROL<br>REGOLAT. DI FOCALIZZ.<br>REGLAGE DE FOCALISATION |
| | BILDLAGE VERT.<br>VERT. PICTURE POSITION<br>POSIZ. VERT. D'IMMAGINE<br>CADRAGE VERTICAL |
| | BILDAMPLITUDE<br>FIELD AMPLITUDE<br>AMPIEZZA D'IMMAGINE<br>AMPLITUDE VERTICALE |
| | TRAPEZ<br>TRAPEZIUM<br>TRAPEZIO<br>TRAPEZE |
| | HOR. FREQUENZ<br>HOR. FREQUENCY<br>FREQ. ORIZZ.<br>FREQ. HORIZ. |
| | VERT. FREQUENZ<br>VERT. FREQUENCY<br>FREQ. VERT. |
| | VERT. LINEARITAET<br>VERT. LINEARITY<br>LINEAR. VERT.<br>LINEAR. VERT. |
| | OST/WEST SYMMETRIE<br>EAST/WEST SYMMETRY<br>SIMMETRIA EST/OVEST<br>SYMMETRIE EST/OUEST |

## Wichtige Schaltzeichen
## Important circuit simbols
## Segni circuitali importanti




IC'S VON UNTEN GESEHEN
IC'S SEEN FROM BOTTOM
IC'S VISTI DI SOTTO
IC'S VUS DU DESSOUS



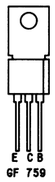

TDA 4601

BF 199

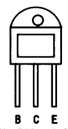
78 L05 CP

BF 421 / BF 422
BC 637 / BF 423

BC 548 / BC 558
BC 337/25
PN 2222
BC 556 / BC 324
BF 414
BC 308 / BC 248
BC 547

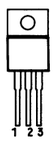



GF 759

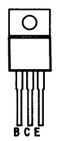



BU 508A / BU 903
BU 508D / BU 908

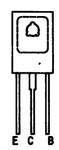
BU 208A
BU 546



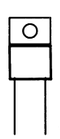

TY 40164 / MC 7505
MC78 MOS CT
7812




BD 561G
BU 908
BU 903
S 668T
BUT 11A
BUT 56A




BD 561 G
BD 139




TDA 8170

3/4W 0617 DIN
1/10W 0204 DIN
1/4W 0207 DIN
1/2W 0411 DIN
1W 0411 DIN
2W 0617 DIN
4W 0922 DIN

WIDERSTAND NICHT BRENNBAR
RESISTOR NOT FLAMMABLE
RESISTENZA NON INFIAMMABILE
RESISTANCE ININFLAMMABLE

DRAHTWIDERSTAND
WIRE RESISTOR
RESISTENZA A FILO
RESISTANCE BOBINEE

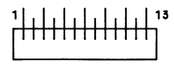
SICHERUNGSWIDERSTAND
SAFETY RESISTOR
RESISTENZA DI SICUREZZA
RESISTANCE DISJONCTABLE

KONDENSATOR
CAPACITOR
CONDENSATORE
CONDENSATEUR
250V=
400V=
630V=
1000V=

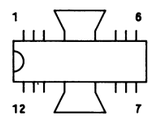
FOLIE
FOIL
A FOGLIA
FOLIO PLASTIQUE

KERAMIK
CERAMIC
CERAMICO
CERAMIQUE

ELKO
ELECTROLYTIC
ELETTROLITICO
ELECTROLYTIQUE




TDA 2653A




TDA 2655B

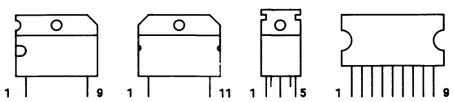
⚠ BEI ERSATZ AUS SICHERHEITSGRUENDEN NUR ORIGINALBAUTEILE VERWENDEN.
FOR REASONS OF SAFETY USE ORIGINAL PARTS ONLY WHEN REPLACING.
IN CASO DI SOSTITUZIONE UTILIZZARE PER RAGIONI DI SICUREZZA SOLAMENTE PEZZI DI RICAMBIO ORIGINALI.
EN CAS DE REMPLACEMENT N'UTILISER, POUR DES RAISONS DE SECURITE, QUE DES PIECES D'ORIGINE.

BEI EINGRIFFEN SCHUTZMASSNAHMEN FUER MOS-BAUTEILE BEACHTEN!
WHEN HANDLING MOS-CIRCUITS, ALWAYS OBSERVE THE MOS PROTECTION MEASURES!
ADOPERANDO COMPONENTI O CIRCUITI MOS OSSERVARNE LE CORRISPONDENTI MISURE DI PROTEZIONE!
LORS DE LA MANIPULATION DES CIRCUITS MOS, RESPECTER LES PRESCRIPTIONS MOS!

STECKERUNTERTEIL ZAEHLRICHTUNG
PLUG BOTTOM PART COUNTING DIRECTION
PARTE INFER. SPINA DIREZ. CONTEGGIO
SENS COMPTAGE PARTIE INFER. CONNECTEUR




LOETSEITE
SOLDER SIDE
LATO SALDATURE
COTE SOUDURE

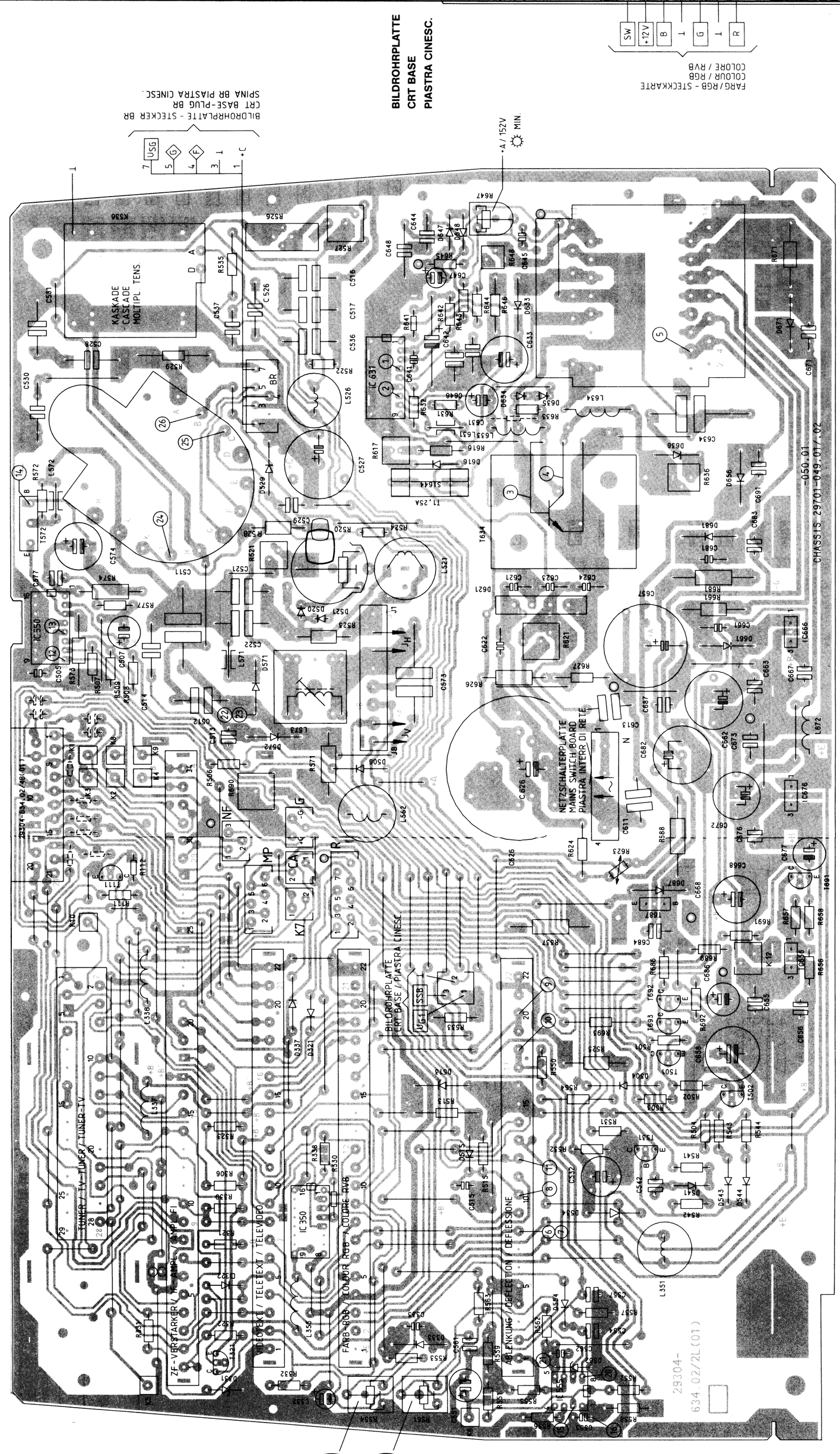


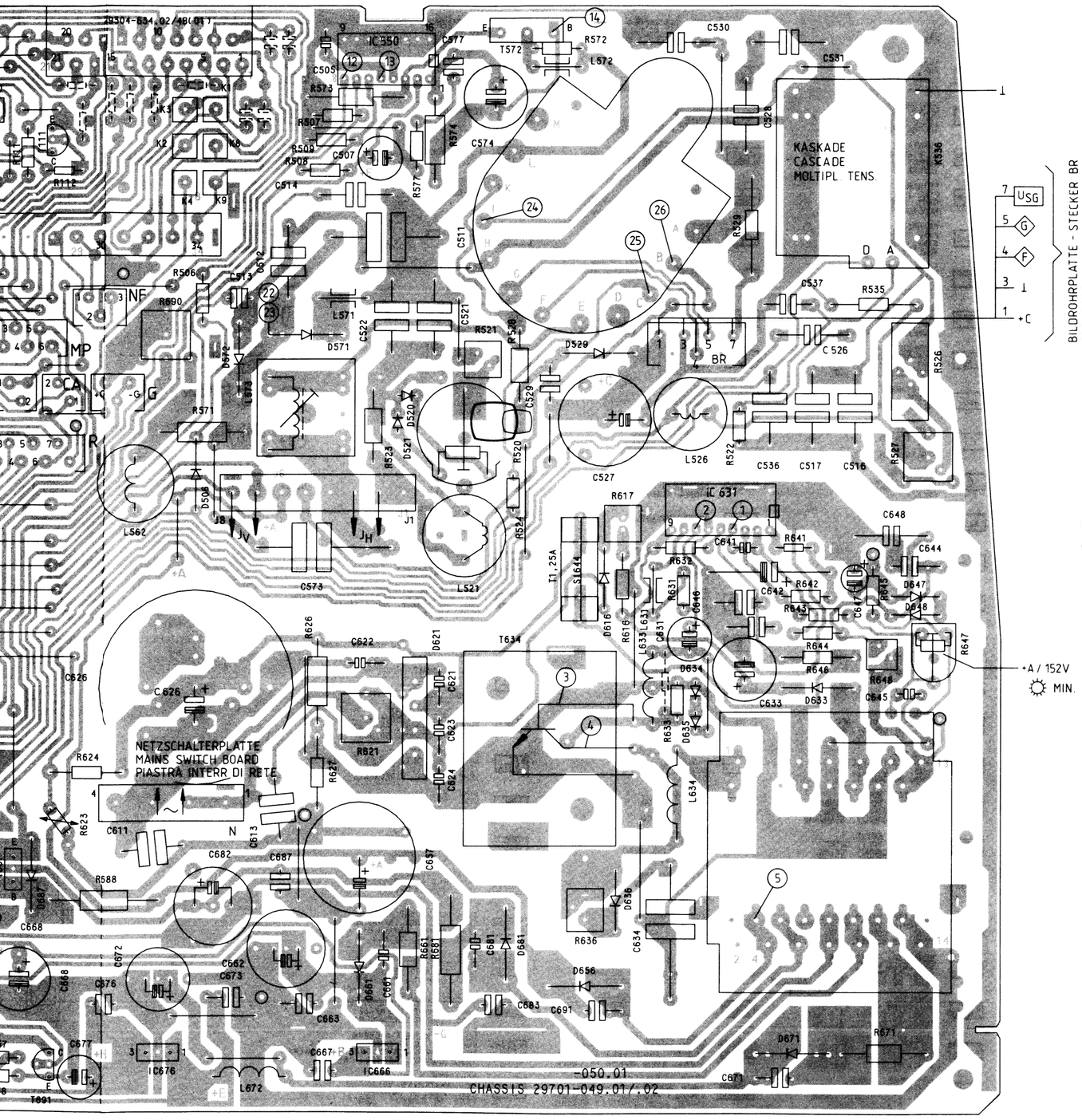

TDA 4935 | DL 60292 | TDA 2040 | TDA 3654 TDA 3653A

SOT 143
G1 G2
S D
BF 994
BF 996

SOT 23
E B
C
BF 569
BF 579

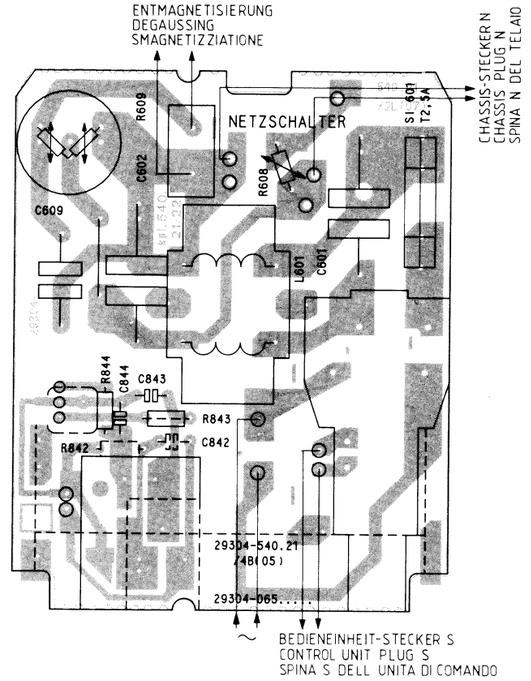
B E
C
BC 847
BC 858


NETZSCHALTERPLATTE
MAINS SWITCH BOARD
PIASTRA INTERR. DI RETE
BILDROHRPLATTE
CRT BASE
PIASTRA CINESC.
FARB/RGB - STECKKARTE
COLOUR / RGB
COLORE / RVB
SW
+12V
B
T
G
T
R
BILDROHRPLATTE - STECKER BR
CRT BASE-PLUG BR
SPINA BR PIASTRA CINESC.
+A / 152V
MIN.
KASKADE
CASCADE
MOLTIPL. TENS
ZF-VERSTÄRKER / IF AMPL. / AMPLI. FI
VIDEOTEXT / TELETEXT / TELEVIDEO
FARB-RGB / COLOUR RGB / COLORE RVB
ABLENKUNG / DEFLECTION / DEFLESSIONE
TUNER / TV-TUNER / TUNER-TV
CHASSIS 29701-049.01/.02
-050.01
29304-634.02/2L(01)

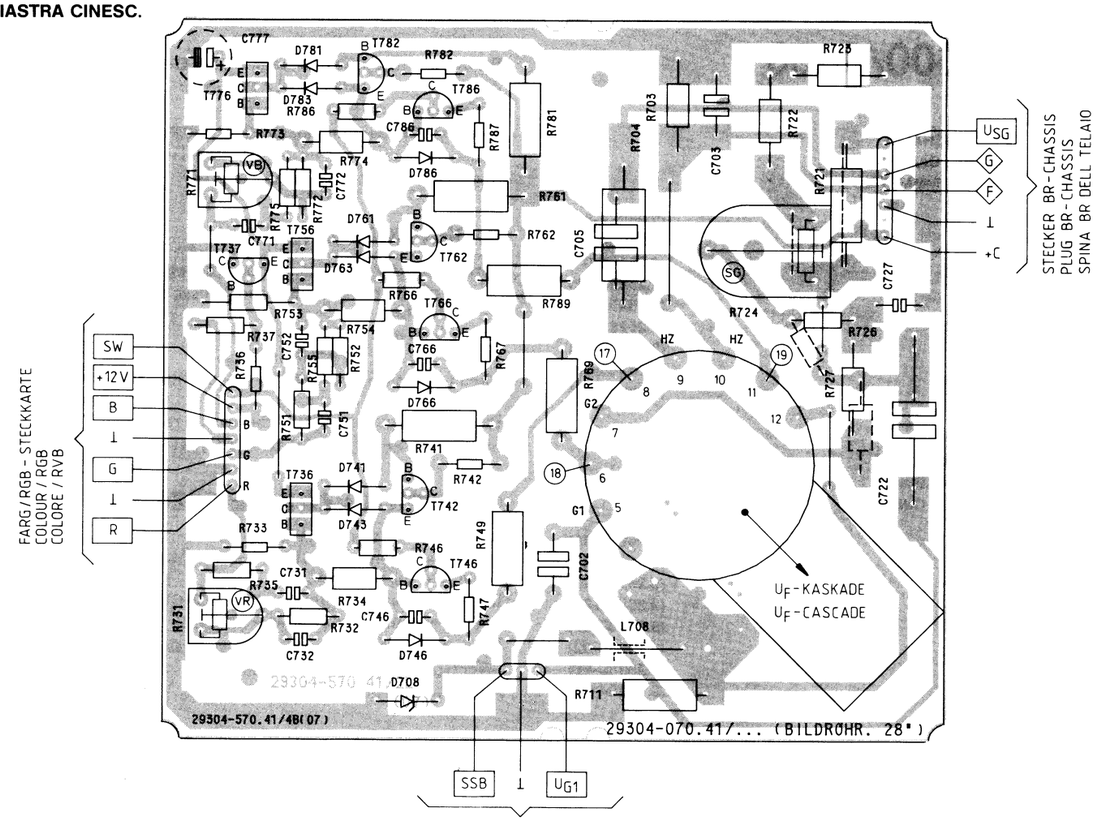




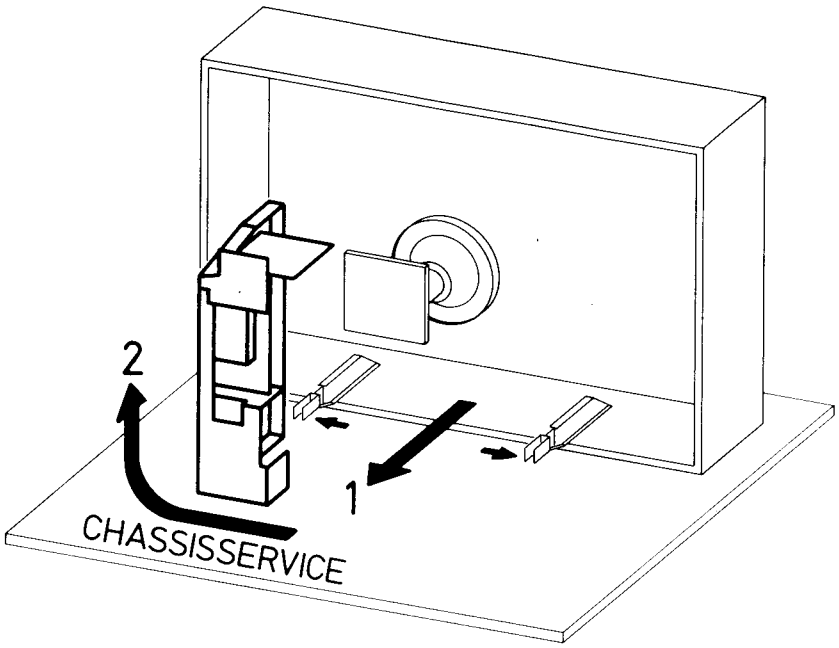

**NETZSCHALTERPLATTE**
**MAINS SWITCH BOARD**
**PIASTRA INTERR. DI RETE**




**BILDROHRPLATTE**
**CRT BASE**
**PIASTRA CINESC.**



(D) Servicestellung
(GB) Service position
(I) Posizione di servizio




GRUNDIG TV

(D) Btx * 32700 #

# SERVICE MANUAL
# CUC 3800

| | |
|---|---|
| **M70-490/9** | **(9.25481-01)** |
| **M70-490/9 text** | **(9.25481-02)** |
| **M70-490/9 text** | **(9.25481-06)** |
| **M70-495/9** | **(9.25482-01)** |
| **M70-495/9 text** | **(9.25482-02)** |
| **M70-495 CTI/text** | **(9.25482-06)** |

Service Manual CUC3800 Sach. - Nr. 72010 - 002.80
Service Manual CUC 3800 Order - No. 72010 - 002..80
Manuale di Servizio CUC 3800 N. di 72010-002.80

(D)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| Service am $I^2C$ Bus | |
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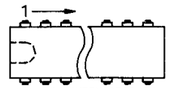
## (D) Symbole und ihre Bedeutung
## (GB) Symbols and their meaning
## (I) Simboli e loro significati

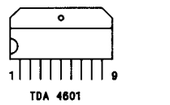
| | |
|---|---|
| P | PROGR. |
| P1 | PROGR. TASTE<br>PROGR. BUTTON<br>TASTO PROGR.<br>TOUCHE PROGR.<br>PULS. PROGR. |
| M | SPEICHERTASTE<br>MEMORY BUTTON<br>TASTO DI MEMORIA<br>TOUCHE MEMOIRE<br>PULS. MEMORIA |
| NORM | NORMTASTE<br>TV STANDARD SELECT. BUTTON<br>COMMUT. DI NORMA<br>TOUCHE DE NORME<br>PULS. DE NORMA |
| ▷▷+ | FEINABST. +<br>FINE TUNING +<br>SINT. FINE +<br>REGLAGE FIN +<br>SINT. FINA + |
| -◁◁ | FEINABST.-<br>FINE TUNING -<br>SINT. FINE -<br>REGLAGE FIN -<br>SINT. FINA - |
| I | SUCHLAUF BD I<br>SELF-SEEK BAND I<br>SINT. AUTOM. BANDA I<br>RECHERCHE AUTOM. BANDE I<br>SINT. AUTOM. BANDA-I |
| III | SUCHLAUF BANDWAHL III<br>SELF-SEEK BAND III<br>SINT. AUTOM. BANDA III<br>RECHERCHE AUTOM. BANDE III<br>SINT. AUTOM. BANDA-III |
| UHF | SUCHLAUF UHF<br>SELF-SEEK UHF<br>SINT. AUTOM. UHF<br>RECHERCHE AUTOM. UHF<br>SINT. AUTOM. UHF |
| | LAUTSTAERKE<br>VOLUME<br>VOLUME SONORE<br>VOLUMEN |
| FT | FEINABST.<br>FINE TUNING<br>SINT. FINE<br>REGLAGE FIN<br>SINT. FINA |
| C | KANALWAHL<br>CHANNEL SEL.<br>SELEZ. CANALE<br>SELECT. DE CANAUX<br>SELECCION CANAL |
| | BALANCE<br>BILANCIAM.<br>BALANCE<br>BALANCE |
| | SUCHLAUF<br>SELF-SEEK<br>SINT. AUTOM.<br>RECHERCHE AUTOM.<br>SINTONIA AUTOMATICA |
| U I/III | SCHALTSP. BANDWAHL<br>BAND SEL. SWITCHING VOLTAGE<br>TENS. DI COMMUT. SELEZ. BANDA<br>TENS. DE COMMUT. SELECT. BANDE<br>TENS. CONMUT. SELEC. BANDA |
| U VHF | SCHALTSP. VHF<br>SWITCHING VOLT. VHF<br>TENS. DI COMMUT. VHF<br>TENS. DE COMMUT. VHF<br>TENS. CONMUT. VHF |
| U UHF | SCHALTSP. UHF<br>SWITCHING VOLT. UHF<br>TENS. DI COMMUT. UHF<br>TENS. DE COMMUT. UHF<br>TENS. CONMUT. UHF |
| U AFC | SCHALTSP. AFC<br>SWITCHING VOLT. AFC<br>TENS. DI COMMUT. AFC<br>TENS. DE COMMUT. AFC<br>TENS. CONMUT. CAF |
| U AV | SCHALTSP. AV<br>AV SWITCHING VOLT.<br>TENS. DI COMMUT. AV<br>TENS. DE COMMUT. AV<br>TENS. CONMUT. AV |
| U NORM | SCHALTSP. NORM<br>SWITCHING VOLT. STANDARD<br>TENS. DI COMMUT. NORMA<br>TENS. DE COMMUT. STANDARD<br>TENS. CONMUT. NORMA |
| U COINC 50/60HZ | SCHALTSP. KOINZ.<br>SWITCHING VOLT. COINC.<br>TENS. DI COMMUT. COINC.<br>TENS. DE COMMUT. COINC.<br>TENS. CONMUT. COINCIDENCIA |
| U EURO-AV | SCHALTSP. EURO-AV<br>SWITCHING VOLT. EURO-AV<br>TENS. DI COMMUT. EURO-AV<br>TENS. DE COMMUT. NORME FR<br>TENS. CONMUT. EURO-AV |
| U VQ | SCHALTSP. VIDEO QUELLE<br>SWITCHING VOLT. VIDEO SOURCE<br>TENS. DI COMMUT. SORG. VIDEO<br>TENS. DE COMMUT. SOURCE VIDEO<br>TENS. CONMUT. VIDEO |
| U DATA | SCHALTSP. DATENBETR.<br>SWITCHING VOLT. DATA MODE<br>TENS. DI COMMUT. DATI<br>TENS. DE COMMUT. FONCT. DONNEES<br>TENS. CONMUT. DATOS |
| U 4,5MHZ | SCHALTSP. 4,5 MHZ<br>SWITCHING VOLT. 4,5 MHZ<br>TENS. DI COMMUT. 4,5 MHZ<br>TENS. DE COMMUT. 4,5 MHZ<br>TENS. CONMUT. 4,5MHZ |
| U τ | REGELSP. VERZOEGERT<br>DELAYED CONTR. VOLTAGE<br>TENS. DI CONTR. RITARD.<br>TENS. DE REGUL. RETARDEE<br>TENS. REGUL. RETARDADA |
| U TUN. | ABSTIMMSP. TUNER<br>TUNING VOLT. TUNER<br>TENS. DI SINTONIA TUNER<br>TENS. D'ACCORD TUNER<br>TENS. SINTONIA AL TUNER |
| U AFC | REGELSP. AFC<br>AFC CONTROL VOLT.<br>TENS. DI CONTR. AFC<br>TENS. DE REGUL. AFC<br>TENS. REGUL. CAF |
| MUTE | STUMMSCHALTUNG<br>MUTING<br>SILENZIAMENTO<br>SILENCIEUX<br>MUTING |
| | TASTIMPULS<br>GATING PULSE<br>IMPULSO A CADENZA<br>IMPULS. DE DECLENCHEMENT<br>IMP. PUERTA |
| VERT. | VERT. TASTIMPULS<br>VERT. GATING PULSE<br>IMP. A CADENZA VERT.<br>IMP. TRAME<br>IMP. CUADRO |
| VERT. | VERT. PARABEL<br>VERT. PARABOLA<br>PARABOLA VERT.<br>SIGNAL PARABOLIQUE<br>SENAL PARABOL. VERT. |
| VERT. | VERT. SAEGEZAHN<br>VERT. SAW TOOTH<br>DENTE DI SEGA VERT.<br>SIGNAL DENT DE SCIE<br>DIENTE DE SIERRA VERT. |
| HOR. | HOR. ANSTEUERUNG<br>HORIZ. DRIVE<br>PILOTAGGIO ORIZZ.<br>SYNCHR. LIGNES<br>EXCITACION HORIZ. |
| REF. | REF. IMPULS<br>REFERENCE PULSE<br>IMP. DI RIFER.<br>IMP. DE REFER.<br>IMP. REFERENCIA HORIZ. |
| | SCHUTZSCHALTUNG<br>CIRCUIT PROTECTION<br>CIRCUITO DI PROTEZIONE<br>CIRCUIT DE SECURITE<br>CIRCUITO DE PROTECCION |
| | FARBTON<br>TINT<br>TINTA<br>TEINTE<br>TINTE |
| REF. | REF. LAUTSTAERKE<br>VOLUME REF. VOLT.<br>TENS. DI RIF. VOLUME<br>TENS. DE REF. VOL. SONORE<br>TENS. REF. VOLUMEN |
| | HELLIGKEIT<br>BRIGHTNESS<br>LUMINOSITA'<br>LUMINOSITE<br>BRILLO |
| | KONTRAST<br>CONTRAST<br>CONTRASTO<br>CONTRASTE<br>CONTRASTE |
| | FARBKONTRAST<br>CONTRAST COLOUR<br>CONTRASTO COLORE<br>CONTRASTE COULEUR<br>SATUR. COLOR |
| FBAS | FBAS-SIGNAL<br>CCVS SIGNAL<br>SEGNALE SVCC<br>SIGNAL VIDEO COMPOSITE<br>SENAL VIDEO COMPUESTA |
| SSC | SUPERSANDCASTLE |
| SB | STRAHLSTR. BEGR.<br>BEAM CURRENT LIM.<br>CORRENTE CATODICA MEDIA<br>LIM. COUR. DE FAISCEAU<br>CORRIENTE MEDIA DE HAZ |
| SSB | SPITZ. STRAHLSTR. BEGR.<br>PEAK BEAM CURRENT LIMITING<br>CORR. CATODICA DI PICCO<br>LIM. DE FAISCEAU CRETE<br>CORRIENTE PICO DE HAZ |
| R | ROT-SIGNAL<br>RED SIGNAL<br>SEGNALE ROSSO<br>SIGNAL ROUGE<br>SENAL ROJA |
| G | GRUEN-SIGNAL<br>GREEN SIGNAL<br>SEGNALE VERDE<br>SIGNAL VERT<br>SENAL VERDE |
| B | BLAU-SIGNAL<br>BLUE SIGNAL<br>SEGNALE BLU<br>SIGNAL BLEU<br>SENAL AZUL |
| Y | Y-SIGNAL<br>SEGNALE Y<br>SIGNAL Y<br>SENAL Y |
| F | F-SIGNAL<br>CHROMA SIGNAL<br>SEGNALE F<br>SIGNAL CHROMA<br>SENAL CROMA |
| SW | SCHWARZWERT<br>BLACK LEVEL<br>LIVELLO DEL NERO<br>NIVEAU DU NOIR<br>NIVEL DE NEGRO |
| AUDIO | AUDIO-SIGNAL<br>SEGNALE AUDIO<br>SIGNAL AUDIO<br>SENAL AUDIO |
| AUDIO-L | AUDIO SIGNAL LINKS<br>AUDIO SIGNAL LEFT<br>SEGNALE AUDIO SINISTRA<br>SIGNAL AUDIO GAUCHE<br>SENAL AUDIO IZQUIERDA |
| AUDIO-R | AUDIO SIGNAL RECHTS<br>AUDIO SIGNAL RIGHT<br>SEGNALE AUDIO DESTRA<br>SIGNAL AUDIO DROIT<br>SENAL AUDIO DERECHA |
| EURO-AV VIDEO | VIDEO SIGNAL EURO-AV<br>SEGNALE VIDEO EURO-AV<br>SIGNAL VIDEO NORME FR<br>SENAL VIDEO EURO-AV |
| EURO-AV AUDIO-R | AUDIO SIGNAL EURO-AV RECHTS<br>AUDIO SIGNAL EURO-AV RIGHT<br>SEGNALE AUDIO EURO-AV DESTRA<br>SIGNAL AUDIO NORME FR DROIT<br>SENAL AUDIO DERECHA EURO-AV |
| EURO-AV AUDIO-L | AUDIO SIGNAL EURO-AV LINKS<br>AUDIO SIGNAL EURO-AV LEFT<br>SEGNALE VIDEO EURO-AV SINISTRA<br>SIGNAL AUDIO NORME FR GAUCHE<br>SENAL AUDIO IZQUIERDA EURO-AV |
| IR | IR-SIGNAL<br>SEGNALE IR<br>SIGNAL IR<br>SENAL IR |
| U G1 | SPG. GITTER 1<br>VOLTAGE GRID 1<br>TENS. GRIGLIA 1<br>TENS. GRILLE G1<br>TENS. REJILLAS G-1 |
| U FOC. | FOKUSSP.<br>FOCUSSING VOLTAGE<br>TENS. DI FOCALIZZ.<br>TENS. DE FOCALIS.<br>TENS. FOCALIZACION |
| U H | HOCHSPANNUNG<br>EHT VOLTAGE<br>ALTA TENS.<br>HAUTE TENS.<br>MAT |
| U SG | SCHIRMGITTERSP.<br>SCREEN-GRID VOLT.<br>TENS. GRIGLIA SCHERMO<br>TENS. GRILLE-ECRAN<br>TENS. ACELERADORES |
| TE | TEXT ENABLE |
| SCL | I²C-CLOCK<br>I²C-BUS |
| VCL | VCR-CLOCK |
| ICL | I-BUS-CLOCK |
| SDA | DATEN<br>DATA<br>DATI<br>DONNEES<br>DATA |
| ZF | ZF-SIGNAL<br>IF SIGNAL<br>SEGNALE FI<br>SIGNAL FI<br>SENAL DE FI |
| PP | PAL PRIORITAET<br>PAL PRIORITY<br>PRIORITA' PAL<br>PRIORITE PAL<br>PRIORIDAD PAL |
| F-DIR. | F-SIGNAL DIREKT<br>F SIGNAL DIRECT<br>SEGNALE F DIRETTO<br>SIGNAL CHROMA DIRECT<br>SENAL CROMA DIRECTA |
| F V | FV-SIGNAL<br>FV SIGNAL<br>SEGNALE FV<br>SIGNAL FY<br>SENAL FV |
| F U | FU-SIGNAL<br>FU SIGNAL<br>SEGNALE FU<br>SIGNAL FX<br>SENAL FU |
| F-VERZ | F-SIGNAL VERZOEGERT<br>F SIGNAL DELAYED<br>SEGNALE F RITARD.<br>SIGNAL CHROMA RETARDE<br>SENAL CROMA RETARDADA |
| DL | VERZOEGERUNGSLEITUNG<br>DELAY LINE<br>LINEA DI RITARDO<br>LIGNE A RETARD<br>LINEA DE RETARDO |
| U SCHUTZ | SCHALTSP./SCHUTZFUNKTION<br>SWITCHING VOLT. /PROTECTIVE FUNC.<br>TENS. DI COMMUT. /FUNZ.DI PROTEZ.<br>TENS. DE COMMUT. / SECURITE<br>TENS. CONMUT./PROTECCION |
| FBAS SYNC. | FBAS/SYNC.-SIGNAL<br>CCVS/SYNC. SIGNAL<br>SEGNALE SINCR. /VIDEO COL. COMP.<br>SIGNAL SYNC./VIDEO COMPOSITE<br>SENAL SINCR./VIDEO COMPUESTA |
| SYNC. | SYNC.-SIGNAL<br>SYNC. SIGNAL<br>SEGNALE SINCR.<br>SIGNAL SYNC.<br>SENAL DE SINCRONISMOS |
| U 50/60 HZ | SCHALTSP. 50/60HZ<br>SWITCHING VOLT.50/60HZ<br>TENS. DI COMMUT. 50/60HZ<br>TENS. DE COMMUT. 50/60HZ<br>TENS. CONMUT. 50/60HZ |
| U BTX | SCHALTSP. BTX<br>SWITCHING VOLT. BTX (VIEWDATA)<br>TENS. COMMUT. VIDEOTEL<br>TENS. COMMUT. VIDEOTEXTE<br>TENS. CONMUT. VIDEOTEXTO |
| SYNC. VT | SYNC. VT<br>SYNC. VT (TELETEXT)<br>SINCR. TELEVIDEO<br>SYNC. TELETEXTE<br>SINCR. TELETEXTO |
| SYNC. BTX | SYNC. BTX<br>SYNC. BTX (VIEWDATA)<br>SINCR. VIDEOTEL<br>SYNC. VIDEOTEXTE<br>SINCR. VIDEOTEXTO |
| U RESET | SCHALTSP. RESET<br>SWITCHING VOLT. RESET<br>TENS. COMMUT.,RESET<br>TENS. CONMUT. RESET |
| U STAND BY | SCHALTSP. STAND BY<br>SWITCHING VOLT. STAND BY<br>TENS. COMMUT. STAND BY<br>TENS. COMMUT.,VEILLE<br>TENS. CONMUT. STAND BY |
| U HUB | SCHALTSP. HUB<br>SWITCHING VOLT. DEVIATION<br>TENS. COMMUT. DEVIAZIONE<br>TENS. COMMUT.,DEVIATION<br>TENS. CONMUT. DESVIACION |
| U DEEM | SCHALTSP. DEEM<br>SWITCHING VOLT. DEEMPHASIS<br>TENS. COMMUT. DEENFASI<br>TENS. COMMUT.,DESACCENT.<br>TENS. CONMUT. DEENFASIS |
| U CAM. AV | SCHALTSP. KAMERA WIEDERG.<br>SWITCHING VOLT. CAMERA PLAYBACK<br>TENS. COMMUT. RIPRODUZ. TELECAM.<br>TENS. COMMUT. REPROD. CAMERA<br>TENS. CONMUT. REPROD. CAMARA |
| U LED | SCHALTSP. LED<br>LED SWITCHING VOLT.<br>LED TENS. DI COMMUT.<br>TENS. DE COMMUT. LED<br>TENS. CONMUT. LED |

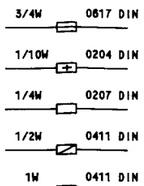


## (D) Wichtige Schaltzeichen
## (GB) Important circuit simbols
## (I) Segni circuitali importanti

| | |
|---|---|
| | ZEILENBREITE<br>LINE WIDTH<br>LARGHEZZA DI RIGA<br>AMPLITUDE HORIZONTALE<br>AMPLITUD HORIZONTAL |
| | OST / WEST AMPLITUDE<br>EAST / WEST AMPLITUDE<br>AMPIEZZA EST / OVEST<br>AMPLITUDE EST / OUEST<br>AMPLITUD E/O |
| | HOR. LINEARITAET<br>HORIZ. LINEARITY<br>LINEAR. ORIZZ.<br>LINEAR. HORIZONT.<br>LINEAL. HORIZONTAL |
| | BILDLAGE HOR.<br>HORIZ. PICTURE POSITION<br>POSIZIONE ORIZZ. D'IMMAGINE<br>CADRAGE HORIZONT.<br>CENTRADO HORIZONTAL |
| | FOKUSREGLER<br>FOCUS CONTROL<br>REGOLAT. DI FOCALIZZ.<br>REGLAGE DE FOCALISATION<br>CONTROL DE FOCO |
| | BILDLAGE VERT.<br>VERT. PICTURE POSITION<br>POSIZ. VERT. D'IMMAGINE<br>CADRAGE VERTICAL<br>CENTRADO VERTICAL |
| | BILDAMPLITUDE<br>FIELD AMPLITUDE<br>AMPIEZZA D'IMMAGINE<br>AMPLITUDE VERTICALE<br>AMPLITUD VERTICAL |
| | TRAPEZ<br>TRAPEZIUM<br>TRAPEZIO<br>TRAPEZE<br>TRAPECIO |
| | HOR. FREQUENZ<br>HOR. FREQUENCY<br>FREQ. ORIZZ.<br>FREQ. HORIZ.<br>FRECUENCIA HORIZONTAL |
| | VERT. FREQUENZ<br>VERT. FREQUENCY<br>FREQ. VERT.<br>FRECUENCIA VERTICAL |
| | VERT. LINEARITAET<br>VERT. LINEARITY<br>LINEAR. VERT.<br>LINEAR. VERT.<br>LINEALIDAD VERTICAL |
| | OST/WEST SYMMETRIE<br>EAST/WEST SYMMETRY<br>SIMMETRIA EST/OVEST<br>SYMMETRIE EST/OUEST<br>SIMETRIA E/O |



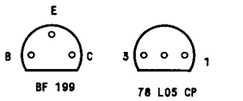



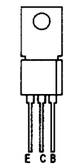



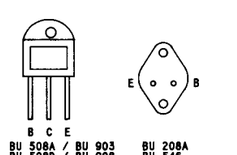

WIDERSTAND NICHT BRENNBAR
RESISTOR NOT FLAMMABLE
RESISTENZA NON INFIAMMABILE
RESISTANCE ININFLAMMABLE

DRAHTWIDERSTAND
WIRE RESISTOR
RESISTENZA A FILO
RESISTANCE BOBINEE

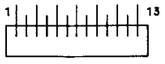
SICHERUNGSWIDERSTAND
SAFETY RESISTOR
RESISTENZA DI SICUREZZA
RESISTANCE DISJONCTABLE

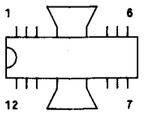


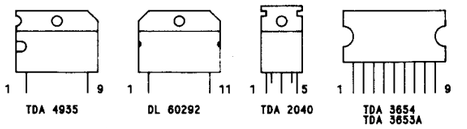




KONDENSATOR
CAPACITOR
CONDENSATORE
CONDENSATEUR
250V~
400V~
630V~
1000V~
FOLIE
FOIL
A FOGLIA
FOLIO PLASTIQUE
KERAMIK
CERAMIC
CERAMICO
CERAMIQUE
ELKO
ELECTROLYTIC
ELETTROLITICO
ELECTROLYTIQUE



HLSTR. BEGR.
URRENT LIMITING
ICA DI PICCO
SCEAU CRETE
ICO DE HAZ

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EURØ-AV
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Ø NORME FR
EURØ-AV

L EURØ-AV RECHTS
EURØ-AV RIGHT
IØ EURØ-AV DESTRA
Ø NORME FR DROIT
DERECHA EURØ-AV

L EURØ-AV LINKS
EURØ-AV LEFT
EØ EURØ-AV SINISTRA
Ø NORME FR GAUCHE
IZQUIERDA EURØ-AV

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LAS G-1

ØLTAGE
CALIZZ.
CALIS.
IZACIÓN

RSP.
VOLT.
A SCHERMØ
-ECRAN
ADØRES

SDA — DATEN / DATA / DATI / DONNEES / DATA

ZF — ZF-SIGNAL / IF SIGNAL / SEGNALE FI / SIGNAL FI / SENAL DE FI

PP — PAL PRIORITAET / PAL PRIORITY / PRIORITA' PAL / PRIORITE PAL / PRIORIDAD PAL

F-DIR. — F-SIGNAL DIREKT / F SIGNAL DIRECT / SEGNALE F DIRETTO / SIGNAL CHROMA DIRECT / SENAL CROMA DIRECTA

$F_V$ — FV-SIGNAL / FV SIGNAL / SEGNALE FV / SIGNAL FY / SENAL FV

$F_U$ — FU-SIGNAL / FU SIGNAL / SEGNALE FU / SIGNAL FX / SENAL FU

F-VERZ — F-SIGNAL VERZOEGERT / F SIGNAL DELAYED / SEGNALE F RITARD. / SIGNAL CHROMA RETARDE / SENAL CROMA RETARDADA

DL — VERZOEGERUNGSLEITUNG / DELAY LINE / LINEA DI RITARDO / LIGNE A RETARD / LINEA DE RETARDO

U SCHUTZ — SCHALTSP./SCHUTZFUNKTION / SWITCHING VOLT. /PROTECTIVE FUNC. / TENS. DI COMMUT. /FUNZ.DI PROTEZ. / TENS. DE COMMUT. / SECURITE / TENS. CONMUT./PROTECCION

FBAS SYNC. — FBAS/SYNC.-SIGNAL / CCVS/SYNC. SIGNAL / SEGNALE SINCR. /VIDEO COL. COMP. / SIGNAL SYNC./VIDEO COMPOSITE / SENAL SINCR./VIDEO COMPUESTA

SYNC. — SYNC.-SIGNAL / SYNC. SIGNAL / SEGNALE SINCR. / SIGNAL SYNC. / SENAL DE SINCRONISMOS

U 50/60 HZ — SCHALTSP. 50/60HZ / SWITCHING VOLT.50/60HZ / TENS. DI COMMUT. 50/60HZ / TENS. DE COMMUT. 50/60HZ / TENS. CONMUT. 50/60HZ

U BTX — SCHALTSP. BTX / SWITCHING VOLT. BTX (VIEWDATA) / TENS. COMMUT. VIDEOTEL / TENS. COMMUT. VIDEOTEXTE / TENS. CONMUT. VIDEOTEXTØ

SYNC. VT — SYNC. VT / SYNC. VT (TELETEXT) / SINCR. TELEVIDEØ / SYNC. TELETEXTE / SINCR. TELETEXTØ

SYNC. BTX — SYNC. BTX / SYNC. BTX (VIEWDATA) / SINCR. VIDEOTEL / SYNC. VIDEOTEXTE / SINCR. VIDEOTEXTØ

U RESET — SCHALTSP. RESET / SWITCHING VOLT. RESET / TENS. COMMUT.,RESET / TENS. CONMUT. RESET

U STAND BY — SCHALTSP. STAND BY / SWITCHING VOLT. STAND BY / TENS. COMMUT. STAND BY / TENS. COMMUT.,VEILLE / TENS. CONMUT. STAND BY

U HUB — SCHALTSP. HUB / SWITCHING VOLT. DEVIATION / TENS. COMMUT. DEVIAZIONE / TENS. COMMUT.,DEVIATION / TENS. CONMUT. DESVIACION

U DEEM — SCHALTSP. DEEM / SWITCHING VOLT. DEEMPHASIS / TENS. COMMUT. DEENFASI / TENS. COMMUT.,DESACCENT. / TENS. CONMUT. DEENFASIS

U KAM. AV — SCHALTSP. KAMERA WIEDERG. / SWITCHING VOLT. CAMERA PLAYBACK / TENS. COMMUT. RIPRODUZ. TELECAM. / TENS. COMMUT. REPROD. CAMERA / TENS. CONMUT. REPROD. CAMARA

U LED — SCHALTSP. LED / LED SWITCHING VOLT. / LED TENS. DI COMMUT. / TENS. DE COMMUT. LED / TENS. CONMUT. LED

ZEILENBREITE / LINE WIDTH / LARGHEZZA DI RIGA / AMPLITUDE HORIZONTALE / AMPLITUD HORIZONTAL

OST / WEST AMPLITUDE / EAST / WEST AMPLITUDE / AMPIEZZA EST / OVEST / AMPLITUDE EST / OUEST / AMPLITUD E/O

HOR. LINEARITAET / HORIZ. LINEARITY / LINEAR. ORIZZ. / LINEAR. HORIZONT. / LINEAL. HORIZONTAL

BILDLAGE HOR. / HORIZ. PICTURE POSITION / POSIZIONE ORIZZ. D'IMMAGINE / CADRAGE HORIZONT. / CENTRADO HORIZONTAL

FOKUSREGLER / FOCUS CONTROL / REGOLAT. DI FOCALIZZ. / REGLAGE DE FOCALISATION / CONTROL DE FOCO

BILDLAGE VERT. / VERT. PICTURE POSITION / POSIZ. VERT. D'IMMAGINE / CADRAGE VERTICAL / CENTRADO VERTICAL

BILDAMPLITUDE / FIELD AMPLITUDE / AMPIEZZA D'IMMAGINE / AMPLITUDE VERTICALE / AMPLITUD VERTICAL

TRAPEZ / TRAPEZIUM / TRAPEZIO / TRAPEZE / TRAPECIO

HOR. FREQUENZ / HOR. FREQUENCY / FREQ. ORIZZ. / FREQ. HORIZ. / FRECUENCIA HORIZONTAL

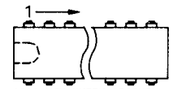
VERT. FREQUENZ / VERT. FREQUENCY / FREQ. VERT. / FRECUENCIA VERTICAL

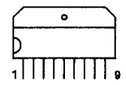
VERT. LINEARITAET / VERT. LINEARITY / LINEAR. VERT. / LINEAR. VERT. / LINEALIDAD VERTICAL

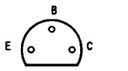
OST/WEST SYMMETRIE / EAST/WEST SYMMETRY / SIMMETRIA EST/OVEST / SYMMETRIE EST/OUEST / SIMETRIA E/O

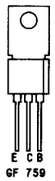


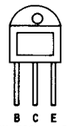
## (D) Wichtige Schaltzeichen
## (GB) Important circuit simbols
## (I) Segni circuitali importanti

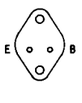


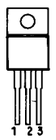



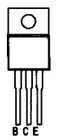


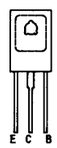



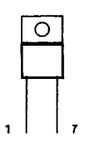



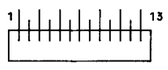



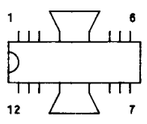



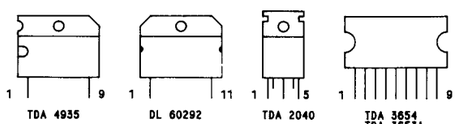



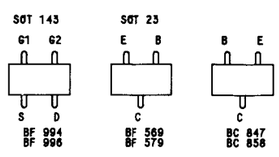




3/4W 0617 DIN
1/10W 0204 DIN
1/4W 0207 DIN
1/2W 0411 DIN
1W 0411 DIN
2W 0617 DIN
4W 0922 DIN

WIDERSTAND NICHT BRENNBAR
RESISTOR NOT FLAMMABLE
RESISTENZA NON INFIAMMABILE
RESISTANCE ININFLAMMABLE

DRAHTWIDERSTAND
WIRE RESISTOR
RESISTENZA A FILO
RESISTANCE BOBINEE

SICHERUNGSWIDERSTAND
SAFETY RESISTOR
RESISTENZA DI SICUREZZA
RESISTANCE DISJONCTABLE

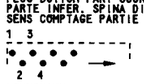
KONDENSATOR
CAPACITOR
CONDENSATORE
CONDENSATEUR
250V~
400V~
630V~
1000V~

FOLIE
FOIL
A FOGLIA
FOLIO PLASTIQUE

KERAMIK
CERAMIC
CERAMICO
CERAMIQUE

ELKO
ELECTROLYTIC
ELETTROLITICO
ELECTROLYTIQUE

STECKERUNTERTEIL ZAEHLRICHTUNG
PLUG BOTTOM PART COUNTING DIRECTION
PARTE INFER. SPINA DIREZ. CONTEGGIO
SENS COMPTAGE PARTIE INFER. CONNECTEUR




LOETSEITE
SOLDER SIDE
LATO SALDATURE
COTE SOUDURE

**ACHTUNG:** (D) **BEI EINGRIFFEN INS GERÄT SIND DIE SICHERHEITSVORSCHRIFTEN NACH VDE701(REPARATURBEZOGEN) BZW.VDE0860/IEC65 (GERÄTEBEZOGEN) ZU BEACHTEN.**

⚠ IM REPARATURFALL DÜRFEN NUR ORIGINALBAUTEILE VERWENDET WERDEN !

ACHTUNG! (D) VORSCHRIFTEN BEIM UMGANG MIT MOS - BAUTEILEN BEACHTEN !

**ATTENTION:** (GB) **PLEASE OBSERVE THE APPLICABLE SAFETY REQUIREMENTS ACCORDING TO VDE 701 (CONCERNING REPAIRS) AND VDE 0860/IEC 65 (CONCERNING TYPE OF PRODUCT ).**

⚠ ONLY USE COMPONENTS WITH THE SAME SPECIFICATION FOR REPLACEMENT !

ATTENTION! (GB) OBSERVE MOS COMPONENTS HANDLING INSTRUCTIONS WHEN SERVICING !

**ATTENTION:** (F) **PRIERE D'OBSERVER LES PRESCRIPTIONS DE SECURITE VDE 701 (CONCERNANT LES REPARATIONS) ET VDE 0860/IEC 65 (CONCERNANT LE TYPE DE PRODUIT).**

⚠ EN CAS DE REMPLACEMENT N'UTILISER QUE DES COMPOSANTS DES MEMES SPECIFICATIONS !

ATTENTION! (F) LORS DE LA MANIPULATION DES CIRCUITS MOS , RESPECTER LES PESCRIPTIONS MOS !

**ATTENZIONE:** (I) **OSSERVARNE LE CORRISPONDENTI PRESCRIZIONI DI SICUREZZA VDE 701 (CONCERNENTE SERVIZIO) E VDE 0860/IEC 65 (CONCERNENTE IL TIPO DI PRODOTTO).**

⚠ IN CASO DI SOSTITUZIONE IMPIEGARE SOLO COMPONENTI CON LE STESSE CARATTERISTICHE !

ATTENZIONE! (I) OSSERVARE LE RELATIVE PRESCRIZIONI DURANTE, LAVORI CON COMPONENTI MOS !

**ATENCION:** (E) **RECOMENDAMOS LAS NORMAS DE SEGURIDAD VDE U OTRAS NORMAS EQUIVALENTES. POR EJEMPLO : VDE 701 PARA REPARACIONES, VDE 0860/IEC 65 PARA APARATOS.**

⚠ EN CASO DE REPARACION UTILIZAR UNICAMENTE REPUESTOS ORIGINALES.

ATENCION! (E) DURANTE LA REPARACION OBSERVAR LAS NORMAS SOBRE COMPONENTES MOS !

EURO-AV-BUCHSE
EURO AV SOCKET
PRESA EURO AV

TUNER / TV-TUNER / TUNER-TV

ZF-VERSTÄRKER / IF-AMPL. / AMPL. FI

VIDEOTEXT / TELETEXT / TELEVIDEO

FARB-RGB / COLOUR RGB / COLORE RVB

ABLENKUNG / DEFLECTION / DEFLESSIONE

BILDROHRPLATTE
CRT BASE
PIASTRA CINESC.

NETZSCHALTERPLATTE
MAINS SWITCH BOARD
PIASTRA INTERR. DI RETE

KASKADE
CASCADE
MOLTIPL. TENS.

BILDROHRPLATTE - STECKER BR
CRT BASE-PLUG BR
SPINA BR PIASTRA CINESC.

FARB/RGB-STECKKARTE
COLOUR/RGB
COLORE/RVB

FARB/RGB - STECKKARTE
COLOUR/RGB
COLORE/RVB

+A / 159V
MIN.

CHASSIS 29701-049.01/.02
-050.01

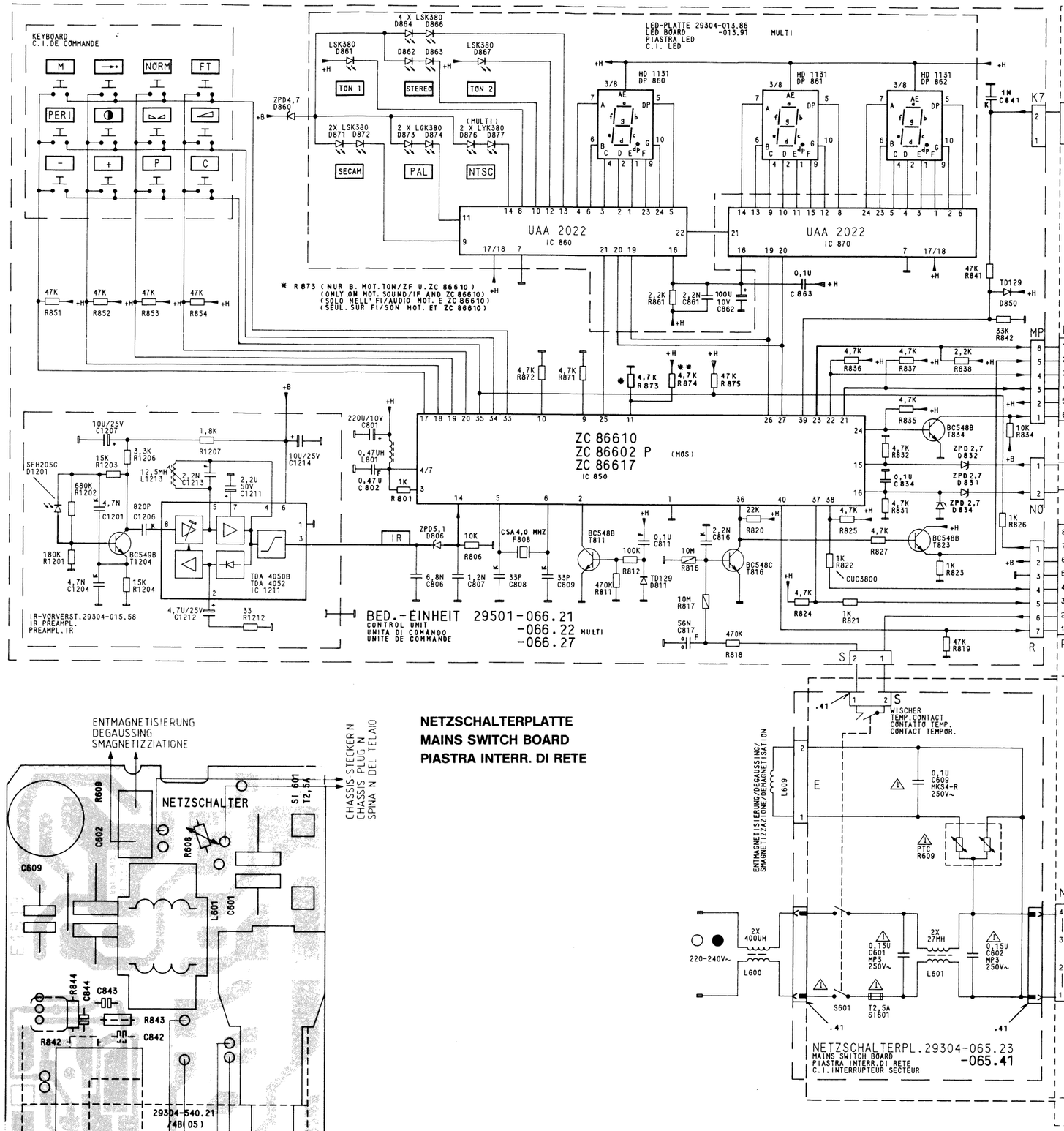
EURO-AV-BUCHSE
EURO AV SOCKET
PRESA EURO AV

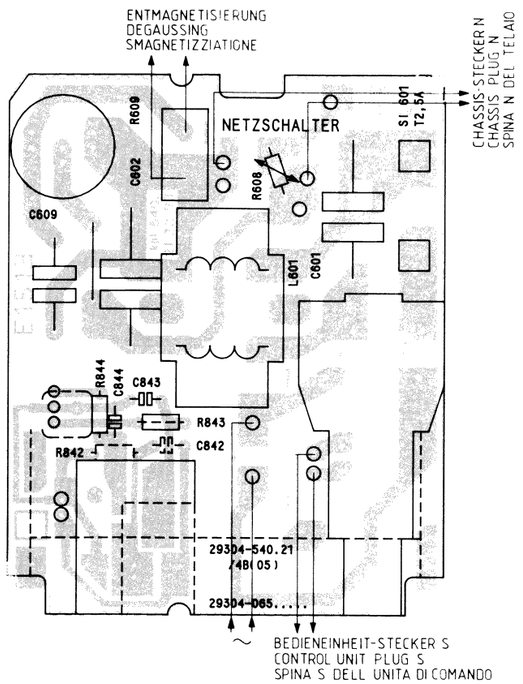
BILDROHRPLATTE - STECKER BR
CRT BASE-PLUG BR
SPINA BR PIASTRA CINESC.

STECKER SP-CHASSIS
PLUG SP-CHASSIS
SPINA SP DELL TELAIO

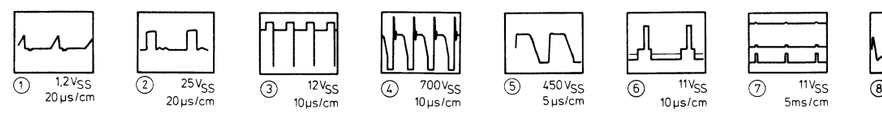
FARB/RGB - STECKKARTE
COLOUR / RGB
COLORE / RVB

STECKER BR-CHASSIS
PLUG BR-CHASSIS
SPINA BR DELL TELAIO




**NETZSCHALTERPLATTE**
**MAINS SWITCH BOARD**
**PIASTRA INTERR. DI RETE**



ZF-VERST. 29504-102.04/.05 IT
-162.06
-102.07
IF AMPL
AMPL FI

BUCHSENPL. 29304-060.43
SOCKET BOARD
PIASTRA PRESE
C I PRISES

VIDEOTEXT 29504-108.05
TELETEXT
TELEVIDEO

SENDERKENNUNG -108.51
STATION IDENTIFICATION
IDENTIFICAZIONE STAZIONE
IDENTIFICATEUR EMETTEUR

VT-STECKERPL. -108.92
TELETEXT SOCKET BOARD
PIASTRA A SPINA TELEVIDEO
PLAQUE ENFICHABLE ANTIOPE

ZUR CINCHBUCHSENNPL.
TO PHONO SOCKET BOARD
ALLA PIASTRA PRESE CINCH
VERS C.I. PRISES CINCH

TDA 8442 (MOS)
IC350

FARB/RGB 29504-105.23 CTI
-165.03 MULTI
COLOUR/RGB
COLORE/RVB
DECODEUR/RVB

ZUR BED.-EINHEIT (KOPFH. BUCHSE)
TO CONTROL UNIT (HEADPHONE SOCKET)
ALL'UNITA DI COMANDO (PRESA CUFFIA)
VERS UNITE DE COMMANDE (PRISE HP)

NF 29504-104.16/.13
AF/BF

D351

NETZGETRENNTES SCHALTUNGSTEIL
T NOT MAINS-ISOLATED
TO NON SEPARATO DALLA RETE
T NON ISOLE DU SECTEUR

TR651

29500-609 39

MASSE ACHTUNG NICHT NETZGETRENNT
MARY CHASSIS NOTE NOT MAINS ISOLATED
SA PRIMARIO ATTENZ. NON SEPAR DALLA RETE
SE PRIMAIRE ATTENT NON ISOLE DU SECTEUR

ABLENKUNG 29504-107.56
DEFLECTION
DEFLESSIONE
BASES DE TEMPS

CUC 3800

AENDERUNGEN VORBEHALTEN
SUBJECT TO ALTERATION
MODIFICATIONS RESERVEES
CON RISERVA DI MODIFICA

PRINTED

6 11 $V_{SS}$ 10 µs/cm
7 11 $V_{SS}$ 5 ms/cm
8 65 $V_{SS}$
9 2,8 $V_{SS}$ 5 ms/cm
10 45 $V_{SS}$ 5 ms/cm
11 8 $V_{SS}$ 20 µs/cm
12 8 $V_{SS}$ 20 µs/cm
13 2,2 $V_{SS}$ 20 µs/cm
14 6 $V_{SS}$ 20 µs/cm
15 22 $V_{SS}$ 5 ms/cm
16 4,4 $V_{SS}$ 5 ms/cm
17 ca. 90 $V_{SS}$ 10 µs/cm
18 ca. 80 $V_{SS}$ 10 µs/cm
19 ca. 70 $V_{SS}$ 10 µs/cm
20 1,4 $V_{SS}$ 20 µs/cm
21 ca. 27 $V_{SS}$ 20 µs/cm
22 175 $V_{SS}$ 20 µs/cm
23 175 $V_{SS}$ 5 ms/cm
24 40 $V_{SS}$ 20 µs/cm
25 80 $V_{SS}$ 20 µs/cm
26 230 $V_{SS}$ 20 µs/cm

VIDEOTEXT 29504-108.05
TELETEXT
TELEVIDEO

SENDERKENNUNG -108.51
STATION IDENTIFICATION
IDENTIFICAZIONE STAZIONE
IDENTIFICATEUR EMETTEUR

VT-STECKERPL. -108.92
TELETEXT SOCKET BOARD
PIASTRA A SPINA TELEVIDEO
PLAQUE ENFICHABLE ANTIOPE

FARB/RGB 29504-105.23 CTI
-165.03 MULTI
COLOUR/RGB
COLORE/RVB
DECODEUR/RVB

ZUR BED.-EINHEIT (KOPFH. BUCHSE)
TO CONTROL UNIT (HEADPHONE SOCKET)
ALL'UNITA DI COMANDO (PRESA CUFFIA)
VERS UNITE DE COMMANDE (PRISE HP)

NF 29504-104.16/.13
AF/BF

TDA 8442 (MOS)
IC350

ABLENKUNG 29504-107.56
DEFLECTION
DEFLESSIONE
BASES DE TEMPS

TDA8140
IC550

TDA8145
IC555

BILDROHRPLATTE 29304-070.40
-070.28
CRT BASE
PIASTRA CINESC
C.R. TUBE CATHOD

K536

TR526
29201-019 10

TR 526
ANSCHL. V. UNTEN GESEHEN
CONN. BOTTOM VIEW
COLLEG. VISTI DI SOTTO
CONN. VUES DE DESSOUS

CUC 3800

AENDERUNGEN VORBEHALTEN
SUBJECT TO ALTERATION
MODIFICATIONS RESERVEES
CON RISERVA DI MODIFICA

PRINTED IN GERMANY / IMPRIME EN ALLEMAGNE

15 22 $V_{SS}$ 5ms/cm
16 44 $V_{SS}$ 5ms/cm
17 ca. 90 $V_{SS}$ 10µs/cm
18 ca. 80 $V_{SS}$ 10µs/cm
19 ca. 70 $V_{SS}$ 10µs/cm
20 1,4 $V_{SS}$ 20µs/cm
21 ca. 27 $V_{SS}$ 20µs/cm
22 175 $V_{SS}$ 20µs/cm
23 175 $V_{SS}$ 5ms/cm
24 40 $V_{SS}$ 20µs/cm
25 80 $V_{SS}$ 20µs/cm
26 230 $V_{SS}$ 20µs/cm

**Service am I²C-Bus (mit MOTOROLA-Prozessor)**

Bei Fehlfunktionen des Gerätes, die nicht auf Netzteil, Hochspannung und Ablenkung zurückzuführen sind, ist der I²C-Bus gemäß Tabelle 1 zu prüfen, bevor weitere Servicearbeiten nach Tabelle 2 durchgeführt werden.

Der µComputer in der Bedieneinheit IC 850 liefert Steuerbefehle für Tuner, ZF, Videotext, Buchsenplatte (Euro-AV-Buchse) inklusive VCR-Fernsteuerung und RGB-Analogwerte über den I²C Bus.

Hinweis:

Bei Modulwechsel ist das Gerät generell auszuschalten!

Auch in Stellung »Bereitschaft« darf kein Modul gezogen werden! MOS-handling beachten.

**Tabelle 1**

| Messung | Meßwert | Meßpunkt | Mögliche Fehler |
|---|---|---|---|
| +H | 5 V | Pin 4, IC 850 | D 671, IC 676, IC 850 |
| Reset | LOW nur im Einschaltmoment | Pin 2 | T 811, D 811 |
| 4 MHz Takt | 4 MHz, 3 $V_{ss}$ | Pin 6, IC 850 | F 808, IC 850 |
| I²C Bus | 5 $V_{ss}$ | Pin 21,23, IC 850 | Die I²C-Bus-Daten sind auch ohne TP-Bedienung oder Keyboardeingabe vorhanden. Bei fehlenden Daten: Tuner-, ZF-, Videotext-Steckkarte nacheinander ziehen bzw. IC 350 Pin 4,5 ablöten. Stellen sich trotz dieser Maßnahmen keine Daten ein ist die Bedieneinheit zu wechseln. |

**Tabelle 2**

Mögliche Fehlerarten des Gesamtgerätes in Abhängigkeit der I²C-Bus-Steuerung.

| Fehler | Mögliche Ursache | Meßwert | Meßpunkt |
|---|---|---|---|
| Keine Bedienfunktion per Keyboard | +H<br>IC 850 | 5 V<br>siehe Tabelle 1 | IC 850 Pin 4 |
| Keine Kanal-Programmumschaltung mit TP | IR-Vorverstärker D 1201, T 1204, +B, | +B = 12 V | Pin 6 IC 1211 |
| Display dunkel keine Anzeige | + H | 5 V | Pin 17, 18<br>IC 860, 870 |
| | C 862, C 863, R 861 | 5 V | Pin 16 IC 860, 870 |
| | IC 860, 870 | Ausgangsignale LOW ca. 3 V | an den Katoden der LED's. |
| Display dunkel oder fehlerhafte Anzeige | Schluß oder Unterbrechung der CLOCK-, DATEN- und Freigabeleitung | ca. 5 $V_{ss}$ | IC 860, 870<br>Pin 19, 21, 20 |
| Keine Frequenzabstimmung | +C über R 337 | ca. 44 V | Tuner Pin 1 |
| | +B, +H | 12 V, 5 V | Tuner Pin 16, 2 |
| | Daten (SDA)/Clock (SCL) I²C Bus | 5 $V_{ss}$ | Tuner Pin 6, 5 |
| Rauschen am Bildschirm | variable Abstimmspannung in Abhängigkeit der Kanaleingabe | 0,2-30 V | Tuner Pin 13, 15 |
| Bildschirm dunkel-kein Rauschen | Tuner Pin 3<br>HIGH | HF 0 V<br>AV > 8 V | Tuner Pin 3 |
| Kein FBAS-Signal an ZF-Bst. Kont. 7, 9 | +B, +B'<br>I²C Bus, SDA, SCL<br>fehlt am Tuner<br>ZF Pin 10 HIGH | 12 V<br>5 $V_{ss}$ | ZF 21, 17<br>Tuner 6, 5<br><br>ZF Pin 10 |
| Kein Ton | ZF-Verstärker | bei voller Lautstärke ca. 1,5 $V_{ss}$ | ZF Pin 28, 29 |
| | Buchsenplatte | " | Stecker AU Pin 6, 8 |
| | NF-Steckkarte | " | Stecker NF Pin 1, 3 |
| | + G und - G | 42 V | Stecker G |
| | + B, + B'<br>I²C Bus, SDA, SCL | 12 V<br>5 $V_{ss}$ | ZF 21, 17<br>ZF 25, 24 |
| Keine Analogwerte | I²C Bus, IC 350 | 5 $V_{ss}$ | IC 350 Pin 4/5<br>Farb/RGB-Baustein: |
| Keine Helligkeit | D/A-Converter | 1-3 V | Stift 10 (Helligk.) |
| Kein Kontrast | D/A-Converter | 2-4 V | Sift 11 (Kontrast) |
| Kein Farbkontrast | D/A-Converter | 2-4 V | Stift 12 (Farbkon.) |
| Nur bei TP-Bedienung<br>Kein Videotext | + B', + E<br>I²C Bus, SDA | 12 V, 8 V<br>5 $V_{ss}$ | VT Pin 13, 2<br>VT Pin 9 |

**Nur bei Multi-Geräten**

| Fehler | Mögliche Ursache | Meßpunkt | Meßwert | | | |
|---|---|---|---|---|---|---|
| Keine Normumschaltung | Bedienungseinheit Tuner, ZF-Verstärker | Displayanzeige (Taste „Norm" drücken) | ▸ „0" CCIR (Norm B/G) | „1" FR (Norm L) | „2" GB (Norm I) | „3" OIRT (Norm D) |
| | | ZF-Pin 2 (Norm 1) | 0 | 1 | 0 | 1 |
| | | ZF-Pin 3 (Norm 2) | 0 | 0 | 1 | 1 |
| | | ZF-Pin 1 (Norm 3) | 0 | 0 | 0 | 0 |
| | | 1 = ca. 12 V | | | | |



**Service checks on the I²C Bus (with MOTOROLA processor)**

If faults occur in the set which cannot be attributed to the power supp the I²C bus should be checked using Table 1 before further service

Via the I²C bus the microcomputer in the control unit IC 850 supplies (teletext), socket board (Euro AV socket) including the VCR remote

**Note:**

N.B. when a module is being changed, the set should always be switc even in the "standby" mode. Observe MOS handling precautions.

**Table 1**

| Test | Measured Value | Test Point |
|---|---|---|
| +H | 5 V | Pin 4, IC 850 |
| Reset | LOW only at moment of switch on | Pin 2 |
| 4 MHz clock | 4 MHz, 3 $V_{pp}$ | Pin 6, IC 850 |
| I²C bus | 5 $V_{pp}$ | Pin 21, 23, IC 850 |

**Table 2**

Possible faults due to I²C Bus control which can occur in any part

| Fault | Possible Cause | Measured |
|---|---|---|
| No functions accepted by keyboard | +H<br>IC 850 | 5 V<br>see Table 1 |
| Channel No. cannot be changed with remote control | IR preamplifier D 1201, T 1204, + B | + B = 12 V |
| Dark display, no indication | + H | 5 V |
| | C 862, C 863, R 861 | 5 V |
| | ICs 860, 870 | LOW outpu approx. 3 |
| Dark display or defective display segments | Short circuit or interruption in CLOCK, DATA and release lines | approx. 5 |
| No frequency tuning | + C via R 337 | approx. 44 |
| | + B, + H | 12 V, 5 V |
| | Data (SDA)/clock (SCL) I²C bus | 5 $V_{pp}$ |
| Noise-infested picture | Variable tuning voltage as function of channel selection | 0.2-30 V |
| Dark screen – no noise | Tuner, Pin 3<br>HIGH | HF 0 V<br>AV > 8 V |
| No CCVS at IF module, contacts 7, 9 | + B, + B'<br>I²C bus, SDA, SCL missing at tuner,<br>IF Pin 10 HIGH | 12 V<br>5 $V_{pp}$ |
| No sound | IF amplifier | approx. 1. max. volu |
| | Socket board | |
| | AF plug-in board | |
| | + G and -G | 42 V |
| | + B, + B'<br>I²C bus, SDA, SCL | 12 V<br>5 $V_{pp}$ |

**Service checks on the I²C Bus (with MOTOROLA processor)**

If faults occur in the set which cannot be attributed to the power supply unit, the EHT or the deflection system, the I²C bus should be checked using Table 1 before further service work is carried using Table 2.

Via the I²C bus the microcomputer in the control unit IC 850 supplies control signals for the tuner, IF, Videotext (teletext), socket board (Euro AV socket) including the VCR remote control, and the RGB analog signals.

**Note:**

N.B. when a module is being changed, the set should always be switched off. Modules must not be unplugged even in the "standby" mode. Observe MOS handling precautions.

**Table 1**

| Test | Measured Value | Test Point | Possible Faults |
|---|---|---|---|
| +H | 5 V | Pin 4, IC 850 | D 671, IC 676, IC 850 |
| Reset | LOW only at moment of switch on | Pin 2 | T 811, D 811 |
| 4 MHz clock | 4 MHz, 3 $V_{pp}$ | Pin 6, IC 850 | F 808, IC 850 |
| I²C bus | 5 $V_{pp}$ | Pin 21, 23, IC 850 | The I²C bus data are present even without input from the remote control or keyboard. If there are no data: Take out the tuner, IF, Videotext plug-in boards successively or unsolder Pins 4,5 of IC 350. If there are still no data replace the control unit. |

**Table 2**

Possible faults due to I²C Bus control which can occur in any part of set.

| Fault | Possible Cause | Measured Value | Test Point |
|---|---|---|---|
| No functions accepted by keyboard | + H<br>IC 850 | 5 V<br>see Table 1 | IC 850, Pin 4 |
| Channel No. cannot be changed with remote control | IR preamplifier<br>D 1201, T 1204, + B | + B = 12 V | Pin 6, IC 1211 |
| Dark display, no indication | + H | 5 V | Pins 17, 18<br>ICs 860, 870 |
| | C 862, C 863, R 861 | 5 V | Pin 16, ICs 860, 870 |
| | ICs 860, 870 | LOW output signals, approx. 3 V | on the cathodes of the LEDs |
| Dark display or defective display segments | Short circuit or interruption in CLOCK, DATA and release lines | approx. 5 $V_{pp}$ | ICs 860, 870<br>Pins 19, 21, 20 |
| No frequency tuning | + C via R 337 | approx. 44 V | Tuner, Pin 1 |
| | + B, + H | 12 V, 5 V | Tuner, Pins 16, 2 |
| | Data (SDA)/clock (SCL) I²C bus | 5 $V_{pp}$ | Tuner, Pins 6, 5 |
| Noise-infested picture | Variable tuning voltage as function of channel selection | 0.2-30 V | Tuner, Pins 13, 15 |
| Dark screen – no noise | Tuner, Pin 3<br>HIGH | HF 0 V<br>AV > 8 V | Tuner, Pin 3 |
| No CCVS at IF module, contacts 7, 9 | + B, + B'<br>I²C bus, SDA, SCL missing at tuner,<br>IF Pin 10 HIGH | 12 V<br>5 $V_{pp}$ | IF, Pins 21, 17<br>Tuner, Pins 6, 5<br>IF, Pin 10 |
| No sound | IF amplifier | approx. 1.5 $V_{pp}$ at max. volume | IF, Pins 28, 29 |
| | Socket board | " | AU plug, Pins 6, 8 |
| | AF plug-in board | " | AF, plug, Pins 1, 3 |
| | + G and -G | 42 V | Plug G |
| | + B, + B'<br>I²C bus, SDA, SCL | 12 V<br>5 $V_{pp}$ | IF, Pins 21, 17<br>IF, Pins 25, 24 |
| No analog signals, | I²C bus, IC 350 | 5 $V_{pp}$ | IC 350, Pins 4/5 |
| | | | Colour/RGB module: |
| Brightness | D/A converter | 1-3 V | Pin 10 (brightness) |
| Contrast | D/A converter | 2-4 V | Pin 11 (contrast) |
| Colour contrast | D/A converter | 2-4 V | Pin 12 (col. contrast) |
| Only in case of remote control | | | |
| No Videotext (teletext) | + B', + E<br>I²C bus, SDA | 12 V, 8 V<br>5 $V_{pp}$ | VT, Pins 13, 2<br>VT, Pin 9 |

**For multi-standard TV sets only**

| Fault | Possible Cause | Test Piont | Measured Value | | | |
|---|---|---|---|---|---|---|
| No standards conversion | Control unit tuner, IF AMP | Indication (press „standard") | „0" CCIR (st. B/G) | „1" FR (st. L) | „2" GB (st. I) | „3" OIRT (st. D) |
| | | IF Pin 2 (st. 1) | 0 | 1 | 0 | 1 |
| | | IF Pin 3 (st. 2) | 0 | 0 | 1 | 1 |
| | | IF Pin 1 (st. 3) | 0 | 0 | 0 | 0 |
| | | 1 = 12 V approx. | | | | |



**Servizio per I²C-Bus (con processore MOTOROLA)**

Se si riscontrano anomalie che non sono dovute nè all'alimentatore, r
trollare prima di tutto il sistema I²C-Bus secondo la tabella 1 e succes
bella 2.

Il microcomputer dell'unità comandi IC 850 fornisce istruzioni o tuner
per mezzo del sistema I²C-Bus; inoltre provvede al telecomando V

**Avviso:**

Mentre si sostituisce un modulo, l'apparecchio va spento!

Non estrarre il modulo nemmeno quando l'apparecchio si trova in p
norme MOS.

**Tabella 1**

| Misura | Valore di misura | Punto di misura |
|---|---|---|
| +H | 5 V | Pin 4, IC 850 |
| Reset | LOW solo all'atto dell'accensione | Pin 2 |
| Cadenza 4 MHz | 4 MHz, 3 $V_{pp}$ | Pin 6, IC 850 |
| I²C Bus | 5 $V_{pp}$ | Pin 21, 23, IC 811 |

**Tabella 2**

Possibili guasti dell'apparecchio dipendenti dal sistema I²C-Bus.

| Guasto | Possibile causa | Valore di misura |
|---|---|---|
| Le funzioni immesse con tastiera non vengono accettate | + H<br>IC 850 | 5 V<br>vedi tabella 1 |
| Non viene commutato da canale a programma mediante TP | Preamplif. ad infrarossi<br>D 1201, T 1204, + B | + B = 12 V |
| Display oscuro<br>Non appaiono indicazioni | + H | 5 V |
| | C 862, C 863, R 861 | 5 V |
| | IC 860, 870 | Segnali d'uscita LOW ca. 9 V |
| Display oscuro oppure errori d'indicazione | CLOCK interrotto o in corto; linea dati e di consenso | ca. 5 $V_{pp}$ |
| La frequenza non viene sintonizzata | + C mediante R 337 | ca. 44 V |
| | + B, + H | 12 V, 5 V |
| | Dati (SDA)/Clock (SCL) I²C-Bus | 5 $V_{pp}$ |
| Rumore sullo schermo | Tensione di sintonia variabile in funzione dell'immissione di canale | 0,2-30 V |
| Schermo oscuro<br>Il rumore non è presente | Tuner pin 3<br>HIGH | HF 0 V<br>AV > 8 V |
| Manca il segnale FBAS sul mod. FI cont. 7, 9 | + B', + B'<br>I²C-Bus, SDA, SCL manca nel tuner,<br>FI pin 10 HIGH | 12 V<br>5 $V_{pp}$ |

| | | |
|---|---|---|
| | 5 $V_{pp}$ | IC 350, Pins 4/5 |
| | 1-3 V<br>2-4 V<br>2-4 V | Colour/RGB module:<br>Pin 10 (brightness)<br>Pin 11 (contrast)<br>Pin 12 (col. contrast) |
| | 12 V, 8 V<br>5 $V_{pp}$ | VT, Pins 13, 2<br>VT, Pin 9 |

| Measured Value | | | | |
|---|---|---|---|---|
| ▸ | „0"<br>CCIR (st. B/G) | „1"<br>FR (st. L) | „2"<br>GB (st. I) | „3"<br>OIRT (st. D) |
| | 0 | 1 | 0 | 1 |
| | 0 | 0 | 1 | 1 |
| | 0 | 0 | 0 | 0 |
| 1 = 12 V approx. | | | | |

**Servizio per $I^2C$-Bus (con processore MOTOROLA)**

Se si riscontrano anomalie che non sono dovute nè all'alimentatore, nè all'alta tensione o alla deflessione, controllare prima di tutto il sistema $I^2C$-Bus secondo la tabella 1 e successivamente effettuare i lavori riportati in tabella 2.

Il microcomputer dell'unità comandi IC 850 fornisce istruzioni o tuner, FI, Televideo e piastra prese (Euro-Scart) per mezzo del sistema $I^2C$-Bus; inoltre provvede al telecomando VCT e ai valori analogici RGB.

**Avviso:**

Mentre si sostituisce un modulo, l'apparecchio va spento!

Non estrarre il modulo nemmeno quando l'apparecchio si trova in posizione d'attesa! Prestare attenzione alle norme MOS.

**Tabella 1**

| Misura | Valore di misura | Punto di misura | Possibili guasti |
|---|---|---|---|
| +H | 5 V | Pin 4, IC 850 | D 671, IC 676, IC 850 |
| Reset | LOW solo all'atto dell'accensione | Pin 2 | T 811, D 811 |
| Cadenza 4 MHz | 4 MHz, 3 $V_{pp}$ | Pin 6, IC 850 | F 808, IC 850 |
| $I^2C$ Bus | 5 $V_{pp}$ | Pin 21, 23, IC 811 | I dati nel sistema $I^2C$-Bus sono presenti anche senza immissione mediante TP o tastiera. Se i dati mancano: staccare una dopo l'altra le schede tuner, FI e Televideo risp.te dissaldare i pin 4 e 5 di IC 350.<br>Se malgrado ciò i dati non sono presenti: sostituire l'unità comandi. |

**Tabella 2**

Possibili guasti dell'apparecchio dipendenti dal sistema $I^2C$-Bus.

| Guasto | Possibile causa | Valore di misura | Punto di misura |
|---|---|---|---|
| Le funzioni immesse con tastiera non vengono accettate | + H<br>IC 850 | 5 V<br>vedi tabella 1 | IC 850, pin 4 |
| Non viene commutato da canale a programma mediante TP | Preamplif. ad infrarossi<br>D 1201, T 1204, + B | + B = 12 V | IC 1211, pin 6 |
| Display oscuro<br>Non appaiono indicazioni | + H | 5 V | Pin 17, 18<br>IC 860, 870 |
| | C 862, C 863, R 861 | 5 V | Pin 16 – IC 860, 870 |
| | IC 860, 870 | Segnali d'uscita LOW ca. 9 V | Ai catodi dei LED |
| Display oscuro oppure errori d'indicazione | CLOCK interrotto o in corto; linea dati e di consenso | ca. 5 $V_{pp}$ | IC 860, 870<br>pin 19, 21, 20 |
| La frequenza non viene sintonizzata | + C mediante R 337 | ca. 44 V | Tuner pin 1 |
| | + B, + H | 12 V, 5 V | Tuner pin 16, 2 |
| | Dati (SDA)/Clock (SCL) $I^2C$-Bus | 5 $V_{pp}$ | Tuner pin 6, 5 |
| Rumore sullo schermo | Tensione di sintonia variabile in funzione dell'immissione di canale | 0,2-30 V | Tuner pin 13, 15 |
| Schermo oscuro<br>Il rumore non è presente | Tuner pin 3<br>HIGH | HF 0 V<br>AV > 8 V | Tuner pin 3 |
| Manca il segnale FBAS sul mod. FI cont. 7, 9 | + B', + B'<br>$I^2C$-Bus, SDA, SCL manca nel tuner,<br>FI pin 10 HIGH | 12 V<br>5 $V_{pp}$ | FI 21, 17<br>Tuner 6, 5<br><br>FI pin 10 |



| | | | |
|---|---|---|---|
| Manca l'audio | Amplificatore FI | a massimo volume ca. 1,5 $V_{pp}$ | FI pin 28, 29 |
| | Piastra prese | " | Spina AV pin 6, 8 |
| | Modulo BF | " | Spina BF pin 1, 3 |
| | + G e - G | 42 V | Spina G |
| | + B, + B'<br>$I^2C$ Bus, SDA, SCL | 12 V<br>5 $V_{pp}$ | FI 21, 17<br>FI 25, 24 |
| Mancano i valori analogici | $I^2C$ Bus, IC 350 | 5 $V_{pp}$ | IC 350 pin 4/5<br><br>Modulo colore/RGB: |
| Manca la luminosità<br>Manca il contrasto<br>Manca il contr. colore | Convertitore D/A<br>Convertitore D/A<br>Convertitore D/A | 1-3 V<br>2-4 V<br>2-4 V | spinotto 10 (luminosità)<br>spinotto 11 (contrasto)<br>spinotto 12 (contr. colore) |
| Solo con l'uso del TP<br>Le funzioni Televideo non vengono accettate | + B', + E<br>$I^2C$ Bus, SDA | 12 V, 8 V<br>5 $V_{pp}$ | VT pin 13, 2<br>VT pin 9 |

**Solo per apparecchi Multi-System**

| Guasto | Possibile cause | Punto di misura | Valore di misura | | | |
|---|---|---|---|---|---|---|
| Non avviene la commutazione di norma sion | Unità comandi Tuner, amplificatore FI | Indicazione sul display (premere tasto "Norm") | ▸ „0"<br>CCIR Norma B/G | „1"<br>FR Norma L | „2"<br>GB Norma I | „3"<br>OIRT Norma D |
| | | FI pin 2 (norma 1) | 0 | 1 | 0 | 1 |
| | | FI pin 3 (norma 2) | 0 | 0 | 1 | 1 |
| | | FI pin 1 (norma 3) | 0 | 0 | 0 | 0 |
| | | 1 = ca. 12 V | | | | |

**Service am $I^2C$-Bus (mit SIEMENS-Prozessor).**

Bei Fehlfunktionen des Gerätes, die nicht auf Netzteil, Hochspannung und Ablenkung zurückzuführen sind, ist der $I^2C$-Bus gemäß Tabelle 1 zu prüfen, bevor weitere Servicearbeiten nach Tabelle 2 durchgeführt werden.

Der µComputer in der Bedieneinheit IC 850 liefert Steuerbefehle für Tuner, ZF, Videotext, Buchsenplatte (Euro-AV-Buchse) inklusive VCR-Fernsteuerung und RGB-Analogwerte über den $I^2C$ Bus.

Hinweis:

Bei Modulwechsel ist das Gerät generell auszuschalten!

Auch in Stellung »Bereitschaft« darf kein Modul gezogen werden! MOS-handling beachten.

**Tabelle 1**

| Messung | Meßwert | Meßpunkt | Mögliche Fehler |
|---|---|---|---|
| +H | 5 V | Pin 40, IC 850 | D 671, IC 676, IC 850 |
| Reset | LOW nur im Einschaltmoment | Pin 9 | C 811, D 811 |
| 12 MHz Takt | 12 MHz, 3 $V_{ss}$ | Pin 19, IC 850 | F 808, IC 850 |
| $I^2C$ Bus | 5 $V_{ss}$ | Pin 21,22, IC 850 | Die $I^2C$-Bus-Daten sind auch ohne TP-Bedienung oder Keyboardeingabe vorhanden. Bei fehlenden Daten: Tuner-, ZF-, Videotext-Steckkarte nacheinander ziehen bzw. IC 350 Pin 4,5 ablöten. Stellen sich trotz dieser Maßnahmen keine Daten ein ist die Bedieneinheit zu wechseln. |

**Tabelle 2**

Mögliche Fehlerarten des Gesamtgerätes in Abhängigkeit der $I^2C$-Bus-Steuerung.

| Fehler | Mögliche Ursache | Meßwert | Meßpunkt |
|---|---|---|---|
| Keine Bedienfunktion per Keyboard | +H<br>IC 850 | 5 V<br>siehe Tabelle 1 | IC 850 Pin 40 |
| Keine Kanal-Programmumschaltung mit TP | IR-Vorverstärker D 1201, T 1204, +B, | +B = 12 V | Pin 6 IC 1211 |
| Display dunkel keine Anzeige | + H | 5 V | Pin 17, 18<br>IC 860, 870 |
| | C 862, C 863, R 861 | 5 V | Pin 16 IC 860, 870 |
| | IC 860, 870 | Ausgangsignale LOW ca. 3 V | an den Katoden der LED's. |
| Display dunkel oder fehlerhafte Anzeige | Schluß oder Unterbrechung der CLOCK-, DATEN- und Freigabeleitung | ca. 5 $V_{ss}$ | IC 860, 870<br>Pin 19, 21, 20 |
| Keine Frequenzabstimmung | +C über R 337 | ca. 44 V | Tuner Pin 1 |
| | +B, +H | 12 V, 5 V | Tuner Pin 16, 2 |
| | Daten (SDA)/Clock (SCL)<br>$I^2C$ Bus | 5 $V_{ss}$ | Tuner Pin 6, 5 |
| Rauschen am Bildschirm | variable Abstimmspannung in Abhängigkeit der Kanaleingabe | 0,2-30 V | Tuner Pin 13, 15 |
| Bildschirm dunkel-kein Rauschen | Tuner Pin 3<br>HIGH | HF 0 V<br>AV > 8 V | Tuner Pin 3 |
| Kein FBAS-Signal an ZF-Bst.<br>Kont. 7, 9 | +B, +B'<br>$I^2C$ Bus, SDA, SCL fehlt am Tuner<br>ZF Pin 10 HIGH | 12 V<br>5 $V_{ss}$ | ZF 21, 17<br>Tuner 6, 5<br><br>ZF Pin 10 |
| Kein Ton | ZF-Verstärker | bei voller Lautstärke ca. 1,5 $V_{ss}$ | ZF Pin 28, 29 |
| | Buchsenplatte | " | Stecker AU Pin 6, 8 |
| | NF-Steckkarte | " | Stecker NF Pin 1, 3 |
| | + G und - G | 42 V, | Stecker G |
| | + B, + B' | 12 V | ZF 21, 17 |
| Keine Analogwerte<br><br>Keine Helligkeit<br>Kein Kontrast<br>Kein Farbkontrast | $I^2C$ Bus, IC 350<br><br>D/A-Converter<br>D/A-Converter<br>D/A-Converter | 5 $V_{ss}$<br><br>1-3 V<br>2-4 V<br>2-4 V | IC 350 Pin 4/5<br>Farb/RGB-Baustein:<br>Stift 10 (Helligk.)<br>Sift 11 (Kontrast)<br>Stift 12 (Farbkon.) |
| Nur bei TP-Bedienung<br>Kein Videotext | + B', + E<br>$I^2C$ Bus, SDA | 12 V, 8 V<br>5 $V_{ss}$ | VT Pin 13, 2<br>VT Pin 9 |

**Nur bei Multi-Geräten**

| Fehler | Mögliche Ursache | Meßpunkt | Meßwert | | | |
|---|---|---|---|---|---|---|
| Keine Normumschaltung | Bedienungseinheit Tuner, ZF-Verstärker | Displayanzeige (Taste „Norm" drücken) | ▸ „0" CCIR (Norm B/G) | „1" FR (Norm L) | „2" GB (Norm I) | „3" OIRT (Norm D) |
| | | ZF-Pin 2 (Norm 1) | 0 | 1 | 0 | 1 |
| | | ZF-Pin 3 (Norm 2) | 0 | 0 | 1 | 1 |
| | | ZF-Pin 1 (Norm 3) | 0 | 0 | 0 | 0 |
| | | 1 = ca. 12 V | | | | |



**Service checks on the $I^2C$ Bus (with SIEMENS processor)**

If faults occur in the set which cannot be attributed to the power
the $I^2C$ bus should be checked using Table 1 before further se

Via the $I^2C$ bus the microcomputer in the control unit IC 850 sup
(teletext), socket board (Euro AV socket) including the VCR re

**Note:**

N.B. when a module is being changed, the set should always be
even in the "standby" mode. Observe MOS handling precauti

**Table 1**

| Test | Measured Value | Test Point |
|---|---|---|
| +H | 5 V | Pin 40, IC 850 |
| Reset | LOW only at moment of switch on | Pin 9 |
| 12 MHz clock | 12 MHz, 3 $V_{pp}$ | Pin 19, IC 850 |
| $I^2C$ bus | 5 $V_{pp}$ | Pin 21, 22, IC 85 |

**Table 2**

Possible faults due to $I^2C$ Bus control which can occur in any

| Fault | Possible Cause | Measu |
|---|---|---|
| No functions accepted by keyboard | + H<br>IC 850 | 5 V<br>see Ta |
| Channel No. cannot be changed with remote control | IR preamplifier D 1201, T 1204, + B | + B = |
| Dark display, no indication | + H | 5 V |
| | C 862, C 863, R 861 | 5 V |
| | ICs 860, 870 | LOW o<br>approx |
| Dark display or defective display segments | Short circuit or interruption in CLOCK, DATA and release lines | approx |
| No frequency tuning | + C via R 337 | approx |
| | + B, + H | 12 V, 5 |
| | Data (SDA)/clock (SCL)<br>$I^2C$ bus | 5 $V_{pp}$ |
| Noise-infested picture | Variable tuning voltage as function of channel selection | 0.2-30 |
| Dark screen – no noise | Tuner, Pin 3<br>HIGH | HF 0<br>AV > 8 |
| No CCVS at IF module, contacts 7, 9 | + B, + B'<br>$I^2C$ bus, SDA, SCL missing at tuner,<br>IF Pin 10 HIGH | 12 V<br>5 $V_{pp}$ |
| No sound | IF amplifier | approx<br>max. v |
| | Socket board | |
| | AF plug-in board | |
| | + G and -G | 42 V |
| | + B, + B' | 12 V |

**$I^2C$ Bus (with SIEMENS processor)**

hich cannot be attributed to the power supply unit, the EHT or the deflection system, ecked using Table 1 before further service work is carried using Table 2.

omputer in the control unit IC 850 supplies control signals for the tuner, IF, Videotext Euro AV socket) including the VCR remote control, and the RGB analog signals.

ng changed, the set should always be switched off. Modules must not be unplugged de. Observe MOS handling precautions.

| leasured Value | Test Point | Possible Faults |
|---|---|---|
| V | Pin 40, IC 850 | D 671, IC 676, IC 850 |
| OW only at moment switch on | Pin 9 | C 811, D 811 |
| MHz, 3 $V_{pp}$ | Pin 19, IC 850 | F 808, IC 850 |
| $V_{pp}$ | Pin 21, 22, IC 850 | The $I^2C$ bus data are present even without input from the remote control or keyboard. If there are no data: Take out the tuner, IF, Videotext plug-in boards successively or unsolder Pins 4,5 of IC 350. If there are still no data replace the control unit. |

Bus control which can occur in any part of set.

| Possible Cause | Measured Value | Test Point |
|---|---|---|
| + H IC 850 | 5 V see Table 1 | IC 850, Pin 40 |
| IR preamplifier D 1201, T 1204, + B | + B = 12 V | Pin 6, IC 1211 |
| + H | 5 V | Pins 17, 18 ICs 860, 870 |
| C 862, C 863, R 861 | 5 V | Pin 16, ICs 860, 870 |
| ICs 860, 870 | LOW output signals, approx. 3 V | on the cathodes of the LEDs |
| Short circuit or interruption in CLOCK, DATA and release lines | approx. 5 $V_{pp}$ | ICs 860, 870 Pins 19, 21, 20 |
| + C via R 337 | approx. 44 V | Tuner, Pin 1 |
| + B, + H | 12 V, 5 V | Tuner, Pins 16, 2 |
| Data (SDA)/clock (SCL) $I^2C$ bus | 5 $V_{pp}$ | Tuner, Pins 6, 5 |
| Variable tuning voltage as function of channel selection | 0.2-30 V | Tuner, Pins 13, 15 |
| Tuner, Pin 3 HIGH | HF 0 V AV > 8 V | Tuner, Pin 3 |
| + B, + B' $I^2C$ bus, SDA, SCL missing at tuner, IF Pin 10 HIGH | 12 V 5 $V_{pp}$ | IF, Pins 21, 17 Tuner, Pins 6, 5 IF, Pin 10 |
| IF amplifier | approx. 1.5 $V_{pp}$ at max. volume | IF, Pins 28, 29 |
| Socket board | " | AU plug, Pins 6, 8 |
| AF plug-in board | " | AF, plug, Pins 1, 3 |
| + G and -G | 42 V | Plug G |
| + B, + B' | 12 V | IF, Pins 21, 17 |

| | | | |
|---|---|---|---|
| No analog signals, | $I^2C$ bus, IC 350 | 5 $V_{pp}$ | IC 350, Pins 4/5 |
| Brightness | D/A converter | 1-3 V | Colour/RGB module: Pin 10 (brightness) |
| Contrast | D/A converter | 2-4 V | Pin 11 (contrast) |
| Colour contrast | D/A converter | 2-4 V | Pin 12 (col. contrast) |
| Only in case of remote control | | | |
| No Videotext (teletext) | + B', + E $I^2C$ bus, SDA | 12 V, 8 V 5 $V_{pp}$ | VT, Pins 13, 2 VT, Pin 9 |

**For multi-standard TV sets only**

| Fault | Possible Cause | Test Piont | Measured Value | | | |
|---|---|---|---|---|---|---|
| No standards conversion | Control unit tuner, IF AMP | Indication (press „standard") | „0" CCIR (st. B/G) | „1" FR (st. L) | „2" GB (st. I) | „3" OIRT (st. D) |
| | | IF Pin 2 (st. 1) | 0 | 1 | 0 | 1 |
| | | IF Pin 3 (st. 2) | 0 | 0 | 1 | 1 |
| | | IF Pin 1 (st. 3) | 0 | 0 | 0 | 0 |
| | | 1 = 12 V approx. | | | | |



**Servizio per $I^2C$-Bus (con processore SIEMENS)**

Se si riscontrano anomalie che non sono dovute nè all'alimentatore, nè all'alta tensione o alla deflessione trollare prima di tutto il sistema $I^2C$-Bus secondo la tabella 1 e successivamente effettuare i lavori riportat bella 2.

Il microcomputer dell'unità comandi IC 850 fornisce istruzioni o tuner, FI, Televideo e piastra prese (Euro- per mezzo del sistema $I^2C$-Bus; inoltre provvede al telecomando VCT e ai valori analogici RGB.

**Avviso:**

Mentre si sostituisce un modulo, l'apparecchio va spento!

Non estrarre il modulo nemmeno quando l'apparecchio si trova in posizione d'attesa! Prestare attenzion norme MOS.

**Tabella 1**

| Misura | Valore di misura | Punto di misura | Possibili guasti |
|---|---|---|---|
| + H | 5 V | Pin 40, IC 850 | D 671, IC 676, IC 850 |
| Reset | LOW solo all'atto dell'accensione | Pin 9 | T 811, D 811 |
| Cadenza 12 MHz | 12 MHz, 3 $V_{pp}$ | Pin 19, IC 850 | F 808, IC 850 |
| $I^2C$ Bus | 5 $V_{pp}$ | Pin 21, 22, IC 811 | I dati nel sistema $I^2C$-Bus sono presenti anche senza immission mediante TP o tastiera. Se i dati mancano: staccare una dopo l'a le schede tuner, FI e Televideo risp.te dissaldare i pin 4 e 5 di IC 350. Se malgrado ciò i dati non sono presenti: sostituire l'unità comandi. |

**Tabella 2**

Poasibili guasti dell'apparecchio dipendenti dal sistema $I^2C$-Bus.

| Guasto | Possibile causa | Valore di misura | Punto di misura |
|---|---|---|---|
| Le funzioni immesse con tastiera non vengono accettate | + H IC 850 | 5 V vedi tabella 1 | IC 850, pin 40 |
| Non viene commutato da canale a programma mediante TP | Preamplif. ad infrarossi D 1201, T 1204, + B | + B = 12 V | IC 1211, pin 6 |
| Display oscuro Non appaiono indicazioni | + H | 5 V | Pin 17, 18 IC 860, 870 |
| | C 862, C 863, R 861 | 5 V | Pin 16 – IC 860, 870 |
| | IC 860, 870 | Segnali d'uscita LOW ca. 9 V | Ai catodi dei LED |
| Display oscuro oppure errori d'indicazione | CLOCK interrotto o in corto; linea dati e di consenso | ca. 5 $V_{pp}$ | IC 860, 870 pin 19, 21, 20 |
| La frequenza non viene sintonizzata | + C mediante R 337 | ca. 44 V | Tuner pin 1 |
| | + B, + H | 12 V, 5 V | Tuner pin 16, 2 |
| | Dati (SDA)/Clock (SCL) $I^2C$-Bus | 5 $V_{pp}$ | Tuner pin 6, 5 |
| Rumore sullo schermo | Tensione di sintonia variabile in funzione dell'immissione di canale | 0,2-30 V | Tuner pin 13, 15 |
| Schermo oscuro Il rumore non è presente | Tuner pin 3 HIGH | HF 0 V AV > 8 V | Tuner pin 3 |
| Manca il segnale | + B', + B' | 12 V | FI 21, 17 |

| | | |
|---|---|---|
| C 350 | 5 $V_{pp}$ | IC 350, Pins 4/5 |
| | | Colour/RGB module: |
| erter | 1-3 V | Pin 10 (brightness) |
| erter | 2-4 V | Pin 11 (contrast) |
| erter | 2-4 V | Pin 12 (col. contrast) |
| | 12 V, 8 V | VT, Pins 13, 2 |
| SDA | 5 $V_{pp}$ | VT, Pin 9 |

| nt | Measured Value | | | |
|---|---|---|---|---|
| n andard") | „0" CCIR (st. B/G) | „1" FR (st. L) | „2" GB (st. I) | „3" OIRT (st. D) |
| st. 1) | 0 | 1 | 0 | 1 |
| st. 2) | 0 | 0 | 1 | 1 |
| st. 3) | 0 | 0 | 0 | 0 |
| 1 = 12 V approx. | | | | |

**Servizio per $I^2C$-Bus (con processore SIEMENS)**

Se si riscontrano anomalie che non sono dovute nè all'alimentatore, nè all'alta tensione o alla deflessione, controllare prima di tutto il sistema $I^2C$-Bus secondo la tabella 1 e successivamente effettuare i lavori riportati in tabella 2.

Il microcomputer dell'unità comandi IC 850 fornisce istruzioni o tuner, FI, Televideo e piastra prese (Euro-Scart) per mezzo del sistema $I^2C$-Bus; inoltre provvede al telecomando VCT e ai valori analogici RGB.

**Avviso:**

Mentre si sostituisce un modulo, l'apparecchio va spento!

Non estrarre il modulo nemmeno quando l'apparecchio si trova in posizione d'attesa! Prestare attenzione alle norme MOS.

**Tabella 1**

| Misura | Valore di misura | Punto di misura | Possibili guasti |
|---|---|---|---|
| +H | 5 V | Pin 40, IC 850 | D 671, IC 676, IC 850 |
| Reset | LOW solo all'atto dell'accensione | Pin 9 | T 811, D 811 |
| Cadenza 12 MHz | 12 MHz, 3 $V_{pp}$ | Pin 19, IC 850 | F 808, IC 850 |
| $I^2C$ Bus | 5 $V_{pp}$ | Pin 21, 22, IC 811 | I dati nel sistema $I^2C$-Bus sono presenti anche senza immissione mediante TP o tastiera. Se i dati mancano: staccare una dopo l'altra le schede tuner, FI e Televideo risp.te dissaldare i pin 4 e 5 di IC 350. Se malgrado ciò i dati non sono presenti: sostituire l'unità comandi. |

**Tabella 2**

Poasibili guasti dell'apparecchio dipendenti dal sistema $I^2C$-Bus.

| Guasto | Possibile causa | Valore di misura | Punto di misura |
|---|---|---|---|
| Le funzioni immesse con tastiera non vengono accettate | + H IC 850 | 5 V vedi tabella 1 | IC 850, pin 40 |
| Non viene commutato da canale a programma mediante TP | Preamplif. ad infrarossi D 1201, T 1204, + B | + B = 12 V | IC 1211, pin 6 |
| Display oscuro Non appaiono indicazioni | + H | 5 V | Pin 17, 18 IC 860, 870 |
| | C 862, C 863, R 861 | 5 V | Pin 16 – IC 860, 870 |
| | IC 860, 870 | Segnali d'uscita LOW ca. 9 V | Ai catodi dei LED |
| Display oscuro oppure errori d'indicazione | CLOCK interrotto o in corto; linea dati e di consenso | ca. 5 $V_{pp}$ | IC 860, 870 pin 19, 21, 20 |
| La frequenza non viene sintonizzata | + C mediante R 337 | ca. 44 V | Tuner pin 1 |
| | + B, + H | 12 V, 5 V | Tuner pin 16, 2 |
| | Dati (SDA)/Clock (SCL) $I^2C$-Bus | 5 $V_{pp}$ | Tuner pin 6, 5 |
| Rumore sullo schermo | Tensione di sintonia variabile in funzione dell'immissione di canale | 0,2-30 V | Tuner pin 13, 15 |
| Schermo oscuro Il rumore non è presente | Tuner pin 3 HIGH | HF 0 V AV > 8 V | Tuner pin 3 |
| Manca il segnale | + B', + B' | 12 V | FI 21, 17 |



| | | | |
|---|---|---|---|
| Manca l'audio | Amplificatore FI | a massimo volume ca. 1,5 $V_{pp}$ | FI pin 28, 29 |
| | Piastra prese | " | Spina AV pin 6, 8 |
| | Modulo BF | " | Spina BF pin 1, 3 |
| | + G e - G | 42 V | Spina G |
| | + B, + B' $I^2C$ Bus, SDA, SCL | 12 V 5 $V_{pp}$ | FI 21, 17 FI 25, 24 |
| Mancano i valori analogici | $I^2C$ Bus, IC 350 | 5 $V_{pp}$ | IC 350 pin 4/5 |
| | | | Modulo colore/RGB: |
| Manca la luminosità | Convertitore D/A | 1-3 V | spinotto 10 (luminosità) |
| Manca il contrasto | Convertitore D/A | 2-4 V | spinotto 11 (contrasto) |
| Manca il contr. colore | Convertitore D/A | 2-4 V | spinotto 12 (contr. colore) |
| Solo con l'uso del TP Le funzioni Televideo non vengono accettate | + B', + E $I^2C$ Bus, SDA | 12 V, 8 V 5 $V_{pp}$ | VT pin 13, 2 VT pin 9 |

**Solo per apparecchi Multi-System**

| Guasto | Possibile cause | Punto di misura | Valore di misura | | | |
|---|---|---|---|---|---|---|
| Non avviene la commutazione di norma sion | Unità comandi Tuner, amplificatore FI | Indicazione sul display (premere tasto "Norm") | „0" CCIR Norma B/G | „1" FR Norma L | „2" GB Norma I | „3" OIRT Norma D |
| | | FI pin 2 (norma 1) | 0 | 1 | 0 | 1 |
| | | FI pin 3 (norma 2) | 0 | 0 | 1 | 1 |
| | | FI pin 1 (norma 3) | 0 | 0 | 0 | 0 |
| | | 1 = ca. 12 V | | | | |

KEYBOARD
C.I.DE COMMANDE

M — NORM — FT
PERI
\- — + — P — C

LED-PLATTE 29304-013.87
LED BOARD -013.95 MULTI
PIASTRA LED
C.I. LED

4 X LSK380 D864 D866
LSK380 D861 — D862 D863 — LSK380 D867
TON 1 — STEREO — TON 2
ZPD4,7 D860
2X LSK380 D871 D872 — 2 X LGK380 D873 D874 — 2 X LYK380 D876 D877 (MULTI)
SECAM — PAL — NTSC

HD 1131 DP 860 — HD 1131 DP 861 — HD 1131 DP 862

UAA 2022 IC 860 — UAA 2022 IC 870

K7

* *R 874 (NUR B. SIE.TON/ZF U. ZC 86610)
(ONLY ON SIE.SOUND/IF AND ZC 86610)
(SOLO NELL' FI/AUDIO SIE. E ZC 86610)
(SEUL.SUR FI/SON SIE. ET ZC 86610)

* R 873 (NUR B.MOT.TON/ZF U. ZC 86610)
(ONLY ON MOT. SOUND/IF AND ZC 86610)
(SOLO NELL' FI/AUDIO MOT. E ZC 86610)
(SEUL. SUR FI/SON MOT. ET ZC 86610)

47K R851 — 47K R852 — 47K R853 — 47K R854
4,7K R872 — 4,7K R871 — 4,7K R873 — 4,7K R874 — 47K R875
0,1U C863 — 2,2K R861 — 2,2N C861 — 100U 10V C862 — 1N C864
47K R841 — 33K R842 — TD 129 D 850
4,7K R836 — 4,7K R837 — 2,2K R838 — MP
4,7K R835 — BC548B T834 — 10K R834
4,7K R832 — ZPD 2,7 D832 — 0,1U C834 — ZPD 2,7 D831
4,7K R831 — ZPD 2,7 D834 — 1K R826 — NO
4,7K R825 — 4,7K R827 — BC548B T823 — 1K R823
1K R822 — CUC3800
4,7K R824 — 1K R821 — 47K R819 — R

ZC 86610
ZC 86602 P
ZC 86617
IC 850 (MOS)

10U/25V C1207 — 1,8K R1207 — 10U/25V C1214
SFH205G D1201 — 15K R1203 — 3,3K R1206 — 12,5MH L1213 — 2,2N C1213 — 2,2U 50V C1211
680K R1202 — 4,7N C1201 — 820P C1206
180K R1201 — BC549B T1204 — TDA 4050B TDA 4052 IC 1211
4,7N C1204 — 15K R1204
4,7U/25V C1212 — 33 R1212
IR-VORVERST.29304-015.56
IR PREAMPL.
PREAMPL.IR

220U/10V C801 — 1K R801 — 0,47UH L801 — 0,47U C802
IR — ZPD5,1 D806 — 10K R806 — 6,8N C806 — 1,2N C807 — CSA4,0MHZ F 808 — 33P C808 — 33P C809
BC548B T811 — 100K R812 — 470K R811 — TD129 D811
0,1U C811 — 2,2N C816 — 22K R820 — BC548C T816
10M R816 — 10M R817 — 56N C817 — 470K R818

BED.-EINHEIT 29501-066.51
CONTROL UNIT -066.52 MULTI
UNITA DI COMANDO -066.73
UNITE DE COMMANDE -066.74

H
120 R 844 — 3,3N C 844
120 R 843 — 3,3N C 843
NF-STUFE
AF STAGE
STADIO BF
ETAGE BF

WISCHER
TEMP.CONTACT
CONTATTO TEMP.
CONTACT TEMPOR.

ENTMAGNETISIERUNG/DEGAUSSING/
SMAGNETIZZAZIONE/DEMAGNETISATION
L609 — E — 0,1U C609 MKS4-R 250V~
PTC R609

220-240V~ — 2X 400UH L600 — 0,15U C601 MP3 250V~ — 2X 27MH L601 — 0,15U C602 MP3 250V~
S601 — T2,5A SI601



KEYBOARD
C.I.DE COMMANDE
M — NORM — FT
PERI
\- — + — P — C
ZPD4,
D860
10U/25V C1207 — 1,8K R1207
SFH205G D1201 — 15K R1203 — 3,3K R1206 — 12,5MH L1213 — 2,2N C1213 — 2,2U 50V C1211
680K R1202 — 4,7N C1201 — 820P C1206
180K R1201 — BC549B T1204 — TDA 4050B TDA 4052 IC 1211
4,7N C1204 — 15K R1204
4,7U/25V C1212 — 33 R1212
IR-VORVERST.29304-015.56
IR PREAMPL.
PREAMPL.IR
NF-STUFE
AF STAGE
STADIO BF
ETAGE BF

KEYBOARD
C.I.DE COMMANDE

M | → | NORM | FT
PERI | ◑ | ◺ | ◿
- | + | P | C

ZPD4,7
D860
+B

4 X LSK380
D864 D866
LSK380 D861
D862 D863
LSK380 D867
TON 1 | STEREO | TON 2

2X LSK380 D871 D872
2 X LGK380 D873 D874
2 X LYK380 D876 D877 (MULTI)
SECAM | PAL | NTSC

LED-PLATTE 29304-013.87
LED BOARD -013.95 MULTI
PIASTRA LED
C.I. LED

HD 1131 DP 860
HD 1131 DP 861
HD 1131 DP 862
3/8 AE DP
A f g b d c B C D E dP F G
4 2 1 9

6,8K R841
2,7K R842
K7

UAA 2022 IC 860
UAA 2022 IC 870

100U/10V C862
2,2K R861
2,2N C861
0,1U C863
1N C864
15K R836
BC548B T838
100 P C866
CUC3800 2,2K R847
TD 129 D850
100 P C850
MP
1K R839
4,7K R837
2,2K R838
330 R840
47K R835
BC548B T834
10K R834
1,8K R832
ZPD2,7 D832
ZPD2,7 D831
NO
1,8K R831
10K C828
BC548B T823
1K R823
1N C823
1K R822 CUC3800
3,9K R824
15K R820
2,2N C816
BC548C T816
10M R816
10M R817
56N C817 F
470K R818
1N C829
10K R821
47K R819
R

SDA 2080-A003
SDA 2040-A007 (IT.)
IC 850
(MOS)

10U/25V C1207
1,8K R1207
3,3K R1206
15K R1203
12,5MH L1213
2,2N C1213
2,2U 50V C1211
10U/25V C1214
SFH205G D1201
680K R1202
4,7N C1201
820P C1206
180K R1201
BC549B T1204
TDA 4050B
TDA 4052
IC 1211
4,7N C1204
15K R1204
4,7U/25V C1212
33 R1212

220U/10V C801
10 K R801
0,47U C802
IR
TD129 D806
TD129 D805
12 MHZ F808
33P C808
33P C809
10U/10V C811
BAT41 D811
8,2K R811

IR-VORVERST.29304-015.56
IR PREAMPL.
PREAMPL.IR

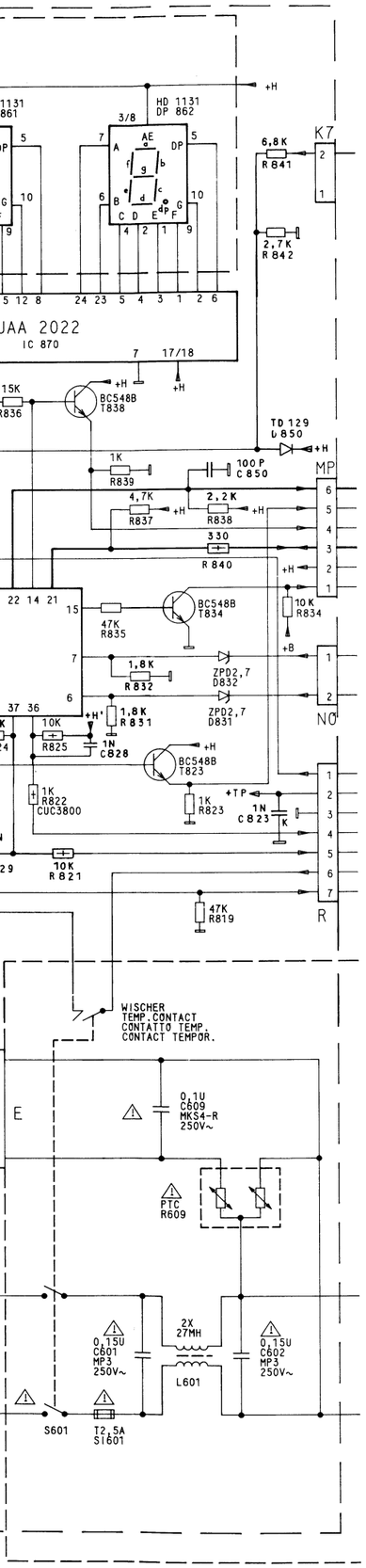
BED.-EINHEIT 29501-072.51
CONTROL UNIT -072.52 MULTI
UNITA DI COMANDO -072.54 IT
UNITE DE COMMANDE

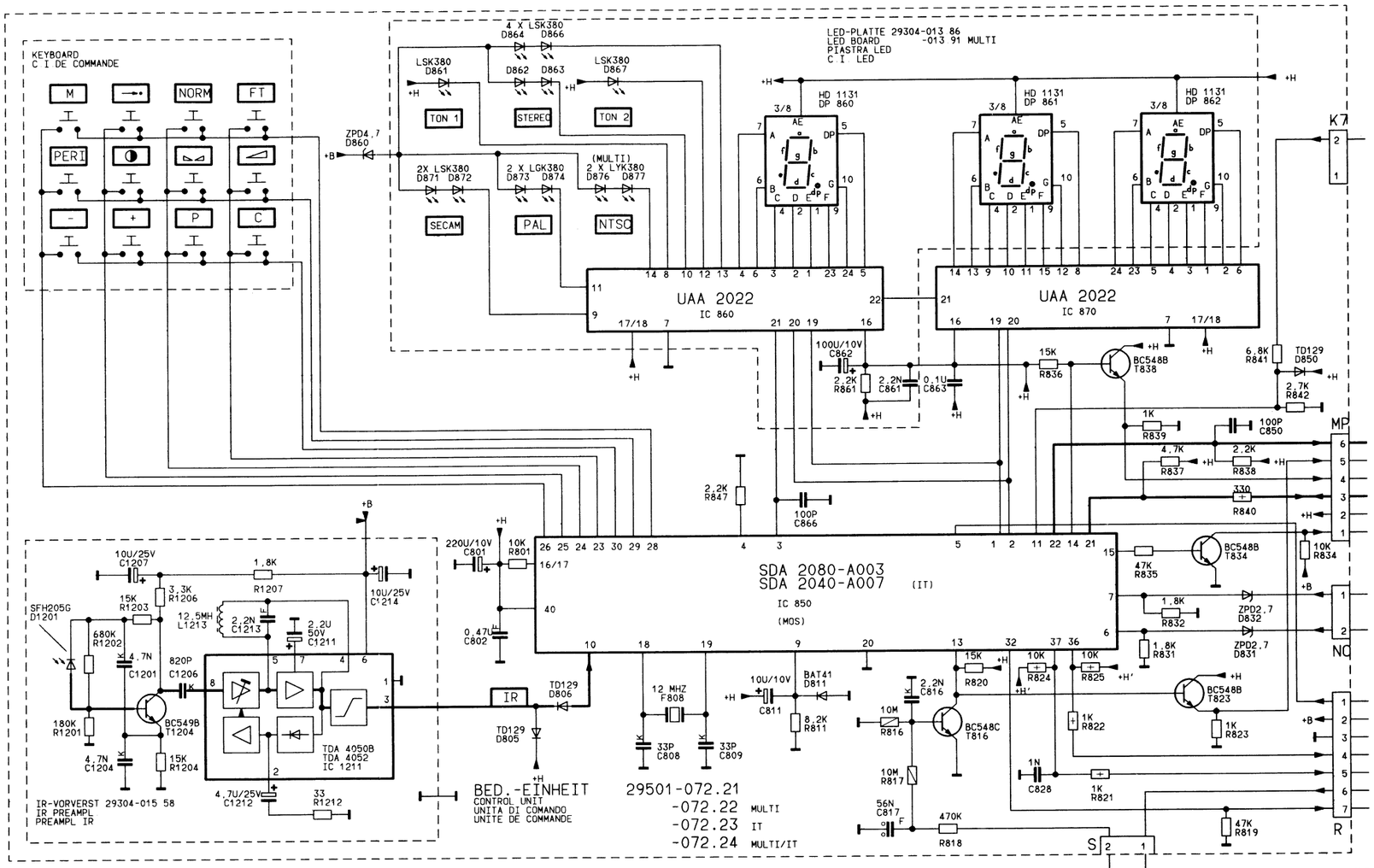
NF-STUFE
AF STAGE
STADIO BF
ETAGE BF
H
120 R 844
3,3N C844
120 R843
3,3N C843

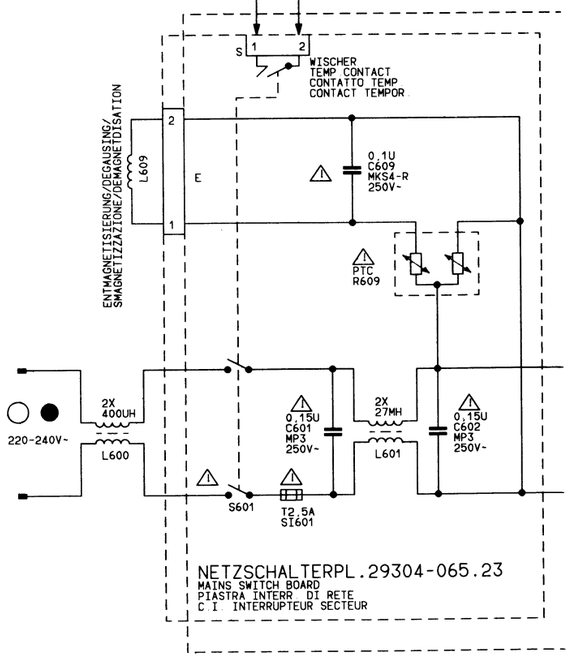
WISCHER
TEMP.CONTACT
CONTATTO TEMP.
CONTACT TEMPOR.
ENTMAGNETISIERUNG/DEGAUSSING/
SMAGNETIZZAZIONE/DEMAGNETISATION
L609
E
0,1U C609 MKS4-R 250V~
PTC R609
220-240V~
2X 400UH
L600
0,15U C601 MP3 250V~
2X 27MH
L601
0,15U C602 MP3 250V~
S601
T2,5A S1601



KEYBOARD
C I DE COMMANDE
M | → | NORM | FT
PERI | ◑ | ◺ | ◿
- | + | P | C
ZPD4,7 D860
+B
10U/25V C1207
1,8K R1207
3,3K R1206
15K R1203
12,5MH L1213
2,2N C1213
2,2U 50V C1211
10U/25V C1214
SFH205G D1201
680K R1202
4,7N C1201
820P C1206
180K R1201
BC549B T1204
TDA 4050B
TDA 4052
IC 1211
4,7N C1204
15K R1204
4,7U/25V C1212
33 R1212
IR-VORVERST 29304-015 58
IR PREAMPL
PREAMPL IR


HD 1131
DP 862
6,8K
R841
K7
2,7K
R842
UAA 2022
IC 870
BC548B
T838
TD 129
D850
1K
R839
100P
C850
MP
4,7K
R837
2,2K
R838
330
R840
47K
R835
BC548B
T834
10K
R834
1,8K
R832
ZPD2,7
D832
ZPD2,7
D831
NO
1,8K
R831
10K
R825
BC548B
T823
1K
R822
CUC3800
1K
R823
1N
C823
10K
R821
47K
R819
R
WISCHER
TEMP.CONTACT
CONTATTO TEMP.
CONTACT TEMPOR.
0,1U
C609
MKS4-R
250V~
PTC
R609
2X
27MH
0,15U
C601
MP3
250V~
0,15U
C602
MP3
250V~
L601
S601
T2,5A
SI601


KEYBOARD
C I DE COMMANDE
M
NORM
FT
PERI
P
C
4 X LSK380
D864 D866
LSK380
D861
D862 D863
LSK380
D867
TON 1
STEREO
TON 2
ZPD4,7
D860
2X LSK380
D871 D872
2 X LGK380
D873 D874
(MULTI)
2 X LYK380
D876 D877
SECAM
PAL
NTSC
LED-PLATTE 29304-013 86
LED BOARD -013 91 MULTI
PIASTRA LED
C I LED
HD 1131
DP 860
HD 1131
DP 861
HD 1131
DP 862
UAA 2022
IC 860
UAA 2022
IC 870
100U/10V
C862
2,2K
R861
2,2N
C861
0,1U
C863
15K
R836
BC548B
T838
6,8K
R841
TD129
D850
2,7K
R842
1K
R839
100P
C850
MP
4,7K
R837
2,2K
R838
330
R840
2,2K
R847
100P
C866
10K
R834
SDA 2080-A003
SDA 2040-A007 (IT)
IC 850
(MOS)
220U/10V
C801
10K
R801
0,47U
C802
10U/25V
C1207
1,8K
R1207
10U/25V
C1214
3,3K
R1206
15K
R1203
12,5MH
L1213
2,2N
C1213
2,2U
50V
C1211
SFH205G
D1201
680K
R1202
4,7N
C1201
820P
C1206
180K
R1201
BC549B
T1204
4,7N
C1204
15K
R1204
TDA 4050B
TDA 4052
IC 1211
4,7U/25V
C1212
33
R1212
IR-VORVERST 29304-015 58
IR PREAMPL
PREAMPL IR
IR
TD129
D806
TD129
D805
BED.-EINHEIT
CONTROL UNIT
UNITA DI COMANDO
UNITE DE COMMANDE
12 MHZ
F808
33P
C808
33P
C809
10U/10V
C811
BAT41
D811
8,2K
R811
15K
R820
2,2N
C816
BC548C
T816
10M
R816
10M
R817
56N
C817
470K
R818
10K
R824
10K
R825
BC548B
T823
1K
R822
1K
R823
1N
C828
1K
R821
47K
R819
R
29501-072.21
-072.22 MULTI
-072.23 IT
-072.24 MULTI/IT


S
WISCHER
TEMP CONTACT
CONTATTO TEMP
CONTACT TEMPOR
ENTMAGNETISIERUNG/DEGAUSING/
SMAGNETIZZAZIONE/DEMAGNETDISATION
L609
0,1U
C609
MKS4-R
250V~
PTC
R609
220-240V~
2X
400UH
L600
0,15U
C601
MP3
250V~
2X
27MH
L601
0,15U
C602
MP3
250V~
S601
T2,5A
SI601
NETZSCHALTERPL.29304-065.23
MAINS SWITCH BOARD
PIASTRA INTERR. DI RETE
C I INTERRUPTEUR SECTEUR

| GERAET<br>SET<br>APPARECCHIO<br>APPAREIL | SACHNUMMER<br>ORDER NO<br>N DI ORDINAZ<br>N DE PRODUITE | BILDROEHRE<br>PICTURE TUBE<br>CINESCOPIO<br>TUBE CATHOD | CUC 3800<br>CHASSIS<br>TELAIO<br>29701-050 | BR-PLATTE<br>CRT BASE<br>PIASTRA CINESC<br>C I TUBE CATHOD<br>29304-070 | BED EINHEIT<br>CONTR UNIT<br>UNITA DI COMANDO<br>UNITE DE COMMANDE<br>29501- | NETZSCHALTERPL<br>MEINS SWITCH BOARD<br>PIASTRA INTERR DI RETE<br>C I INTERRUPTEUR SECTEUR<br>29304-065 | KOPFH ANSCHL PL<br>HEADPHONE SOCKET BOARD<br>PIASTRA PRESA CUFFIA<br>C I RACCORD CASQUE<br>29304-054 | CINCHBUCHSENPL<br>PHONO SOCKET BOARD<br>PIASTRA PRESE CINCH<br>C I PRISES CINCH<br>29304-008 | NF<br>AF<br>BF<br>29504-104 | TELE-PILOT<br>29622-050 |
|---|---|---|---|---|---|---|---|---|---|---|
| M70-490/9 TEXT | 9 25481-02 | 28" II ☐ TINTED | .72 | .40 | -066 28 | .23 | AUF CINCHBUCHSENPL | .06 | .13 | .01 |
| M70-490/9 TEXT | 9 25481-06 | 28" II ☐ TINTED | .72 | .40 | -072 24 | .23 | AUF CINCHBUCHSENPL | .06 | .13 | .03 |
| M70-495/9 TEXT | 9 25482-02 | 28" II ☐ TINTED | .72 | .40 | -066 74 | AUF BED -EINHEIT | AUF BED -EINHEIT | .05 | .16 | .01 |
| M70-495 CTI/TEXT | 9 25482-06 | 28" II ☐ TINTED | .74 | .40 | -072 54 | AUF BED -EINHEIT | AUF BED -EINHEIT | .05 | .16 | .03 |

## Ⓓ Abnehmen und Aufsetzen der Geräterückwand

## GB Disassembly and assembly of the cabinet rear panel

## Ⓘ Smontaggio e montaggio dello schienale dell'apparecchio

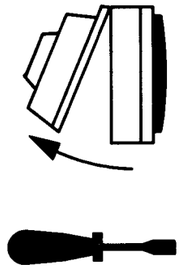
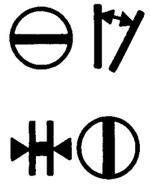
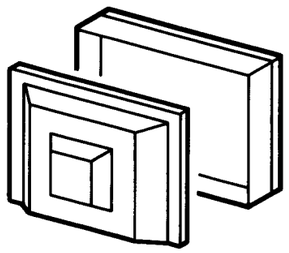
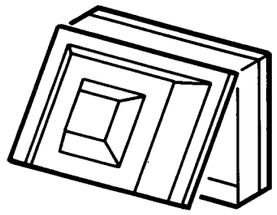
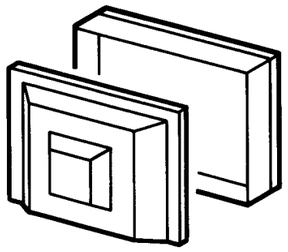
| | | | |
|---|---|---|---|
| Symbol auf der Geräterückwand beachten!<br><br>Please note the symbol at the rear of the cabinet!<br><br>Osservare il simbolo sullo schienale | |  |  |
| Hinweis<br><br>Note<br><br>Nota | Schraubendreher (Größe 4) in die markierten Aussparungen stecken. Drücken oder drehen bis der Schnapphaken ausrastet.<br><br>Insert the screwdriver (size 4) into the marked holes. Press or turn it until the catch disengages.<br><br>Inserire un giravite (di misura 4) nelle rientranze contrassegnate. Premere o ruotare poi fino a che il gancio a scatto viene a sganciarsi. | | Drehen um 90°<br><br>Turn by 90°<br><br>Ruotare di 90° |
| Abnehmen und Aufsetzen der Geräterückwand<br><br>Disassembly and assembly of the cabinet rear panel<br><br>Smontaggio e montaggio dello schienale |  |  |  |



TABELLE UEBER 110° BILDROEHRENTYPEN
TABLE OF 110° PICTURE TUBE TYPES
TABELLA DI TIPI DI TUBI A 110°
TABLEAU DES MODELES DE TUBES CATHOD 110°

○ = RUNDROEHRE/ CIRCULAR

☐ = FLAT SQUARE-ROEHRE /

| ⌀ | TYPE<br>TYPE<br>TIBO<br>MODELE | HERSTELLER<br>MANUFACTURER<br>DITTA<br>FABRICANT | BEMERKUNG<br>REMARK<br>OSSERVAZIONE<br>REMARQUE |
|---|---|---|---|
| 21"/55CM | A 51 EAK 01X 05 | PHILIPS | ☐ TINTED GLASS 45 AX |
| 22"/56CM | A 56-540 X | PHILIPS/<br>ELEKTRONSKA | ○ CLEAR GLASS 30 AX |
| 22"/56CM | 560 EYB 22-TC 01 | HITACHI | ○ CLEAR GLASS 30 AX ERSATZ (PIL SOCKEL<br>RICAMBIO ZOCCOLO |
| 22"/56CM | A 56-701 X | VIDEO COLOR | ○ CLEAR GLASS PIL |
| 25"/63CM | A 59 EAK 00X 01 | PHILIPS | ☐ CLEAR GLASS 45 AX |
| 25"/63CM | A 59 EAK 01X 01 | PHILIPS | ☐ TINTED GLASS 45 AX |
| 25"/63CM | A 59 EAS 00X 01 | VIDEO COLOR | ☐ CLEAR GLASS FS 10 |
| 26"/66CM | A 66-540 X | PHILIPS/<br>ELEKTRONSKA | ○ CLEAR GLASS 30 AX |
| 28"/70CM | A 66 EAK 00X 01 | PHILIPS | ☐ CLEAR GLASS 45 AX |
| 28"/70CM | A 66 EAK 01X 01 | PHILIPS | ☐ TINTED GLASS 45 AX |
| 28"/70CM | A 66 EAK 50X 33 | PHILIPS | ☐ CLEAR GLASS 45 AX (32 KHZ) |
| 28"/70CM | A 66 EAK 50X 32 | PHILIPS | ☐ CLEAR GLASS 45 AX (32 KHZ II. GENER |
| 28"/70CM | A 66 EAK 50X 01 | PHILIPS | ☐ CLEAR GLASS 45 AX (II. GENER.) |
| 28"/70CM | A 66 EAK 51X 01 | PHILIPS | ☐ TINTED GLASS 45 AX (II. GENER.) |
| 28"/70CM | A 66 EAS 00X 01 | VIDEO COLOR | ☐ CLEAR GLASS FS 10 |
| 28"/70CM | A 66 ECF 00X 01 | SEL | ☐ PLAN GON |
| 32"/82CM | A 76 JTS 90X 03 (W) | TOSHIBA | ☐ TINTED GLASS |
| 37"/95CM | A 89 JKA 81X | MITSUBISHI | ☐ TINTED GLASS ( I. GENER) |
| 37"/95CM | A 89 JVU 11X | MITSUBISHI | ☐ TINTED GLASS (II. GENER.) |

| BED.EINHEIT<br>CONTR. UNIT<br>UNITA DI COMANDO<br>UNITE DE COMMANDE<br>29501- | NETZSCHALTERPL.<br>MEINS SWITCH BOARD<br>PIASTRA INTERR.DI RETE<br>C.I.INTERRUPTEUR SECTEUR<br>29304-065 | KOPFH. ANSCHL.PL.<br>HEADPHONE SOCKET BOARD<br>PIASTRA PRESA CUFFIA<br>C.I.RACCORD CASQUE<br>29304-054 | CINCHBUCHSENPL.<br>PHONO SOCKET BOARD<br>PIASTRA PRESE CINCH<br>C.I.PRISES CINCH<br>29304-008 | NF<br>AF<br>BF<br>29504-104 | TELE-PILOT<br>29622-050 |
|---|---|---|---|---|---|
| -066 28 | 23 | AUF CINCHBUCHSENPL. | 06 | .13 | 01 |
| -072 24 | 23 | AUF CINCHBUCHSENPL. | 06 | .13 | 03 |
| -066 74 | AUF BED.-EINHEIT | AUF BED.-EINHEIT | 05 | .16 | 01 |
| -072 54 | AUF BED.-EINHEIT | AUF BED.-EINHEIT | 05 | .16 | 03 |

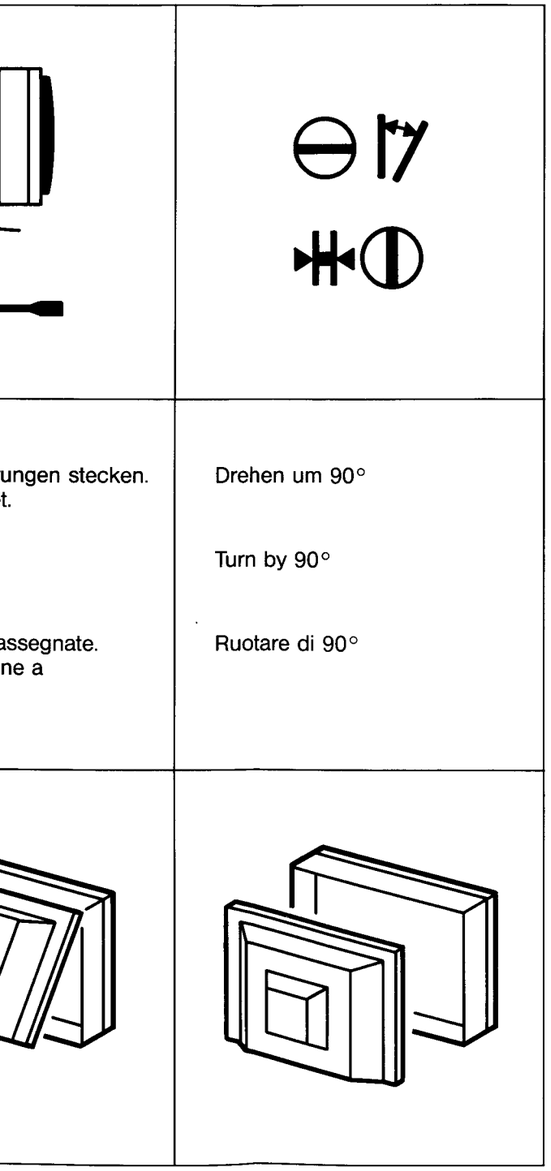


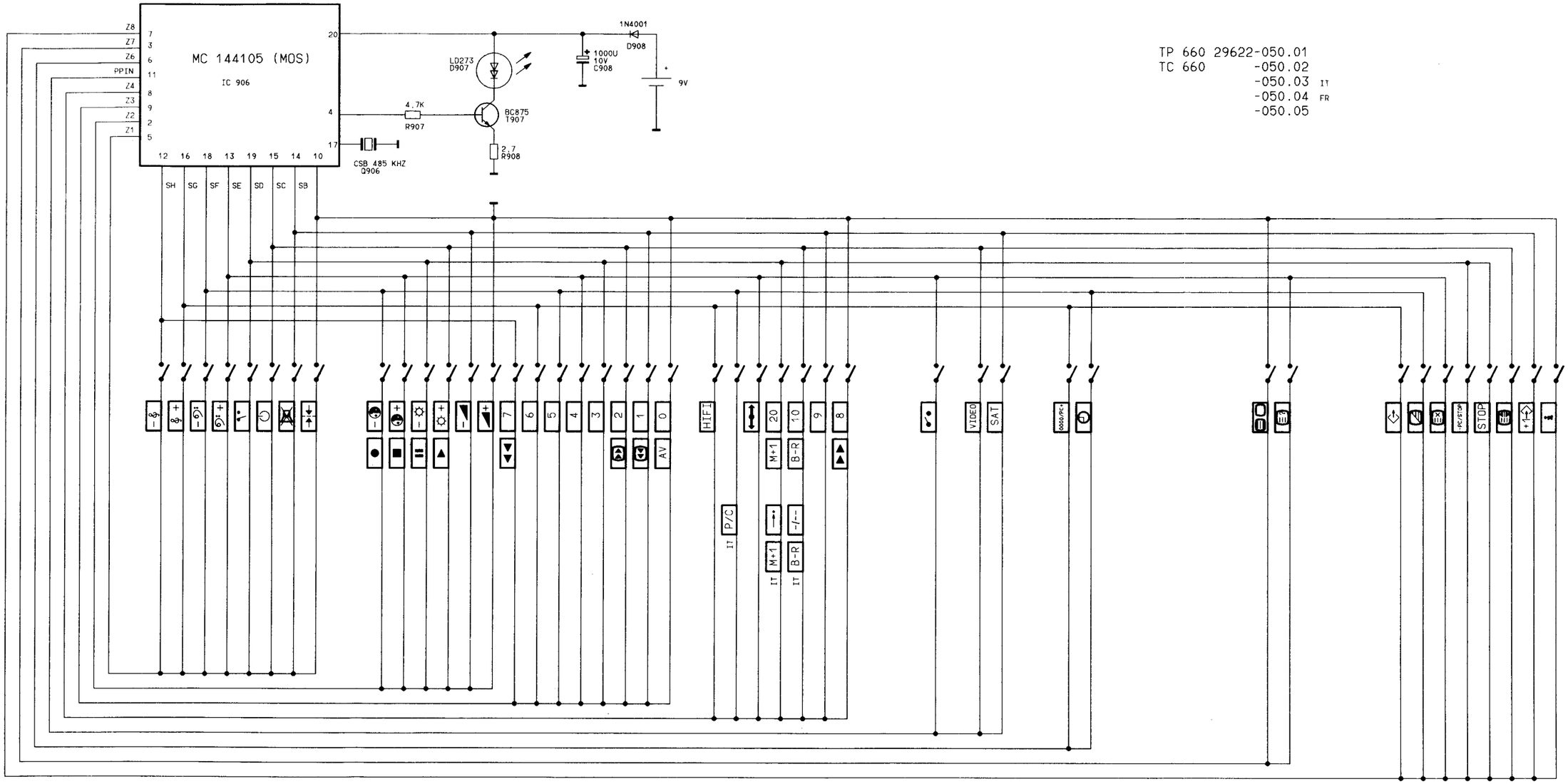



TABELLE UEBER 110° BILDROEHRENTYPEN
TABLE OF 110° PICTURE TUBE TYPES
TABELLA DI TIPI DI TUBI A 110°
TABLEAU DES MODELES DE TUBES CATHOD 110°

○ = RUNDROEHRE/ CIRCULAR PICTURE TUBE / TUBO AD ANGOLI TONDI / TUBE A COINS RONDS

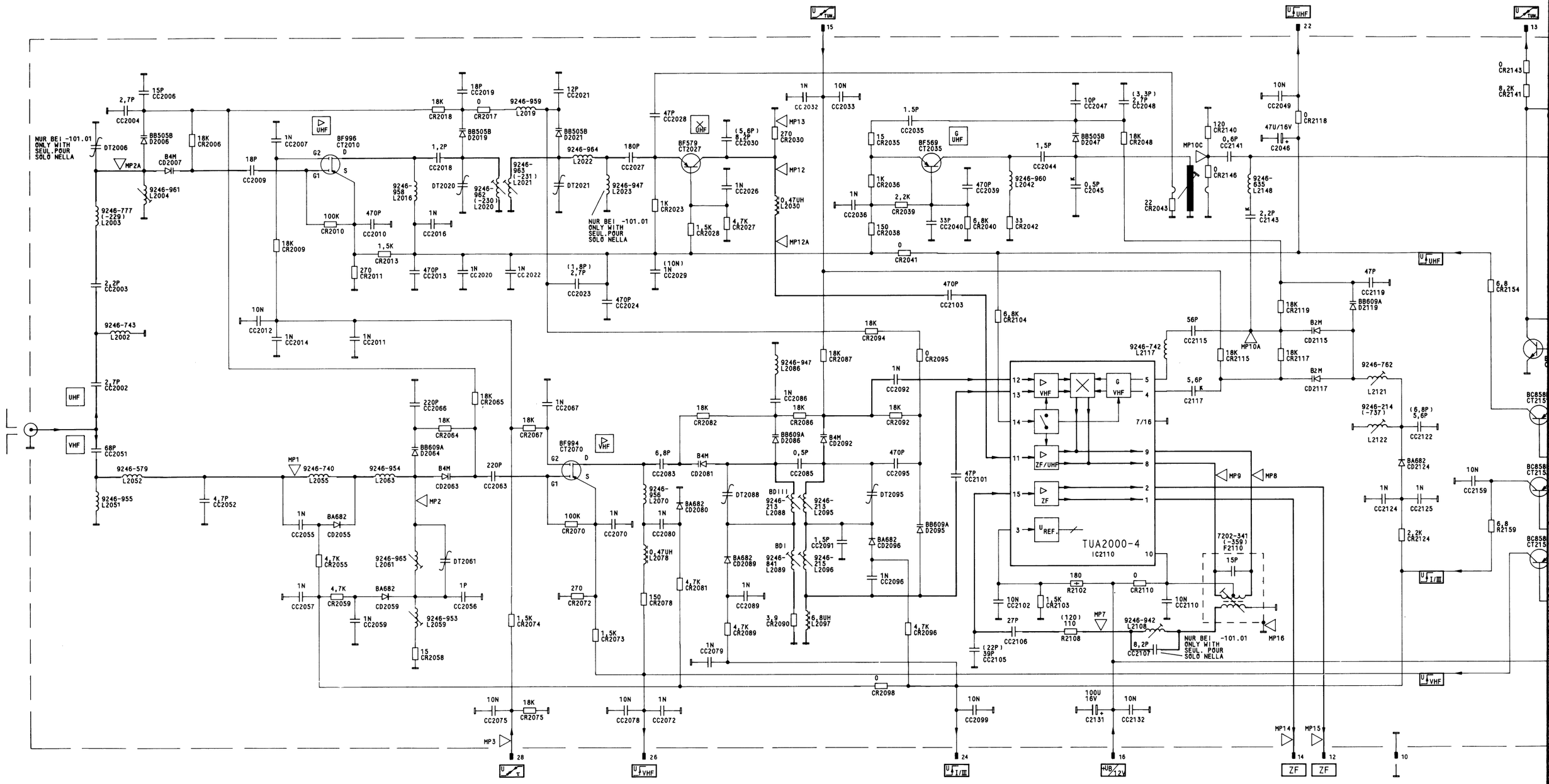
□ = FLAT SQUARE-ROEHRE / FLAT SQUARE TUBE / TUBO FLAT SQUARE / TUBE FLAT SQUARE

| ⌀ | TYPE<br>TYPE<br>TIBO<br>MODELE | HERSTELLER<br>MANUFACTURER<br>DITTA<br>FABRICANT | BEMERKUNG<br>REMARK<br>OSSERVAZIONE<br>REMARQUE | $L_V$<br>MH | $L_H$<br>MH | $R_V$<br>Ω | $R_H$<br>Ω | $U_H$<br>KV | $U_{FOC}$<br>KV | SACHNUMMER<br>ORDER NO.<br>N. D'ORDINAZIONE<br>N. DE PRODUITE |
|---|---|---|---|---|---|---|---|---|---|---|
| 21"/55CM | A 51 EAK 01X 05 | PHILIPS | □ TINTED GLASS 45 AX | 11,2 | 1,84 | 5,76 | 1,91 | 25 | 7,75 | 8300-020-351 |
| 22"/56CM | A 56-540 X | PHILIPS/<br>ELEKTRONSKA | ○ CLEAR GLASS 30 AX | 10 | 1,5 | 5,9 | 1,3 | 25 | 7 | 8300-020-390 |
| 22"/56CM | 560 EYB 22-TC 01 | HITACHI | ○ CLEAR GLASS 30 AX ERSATZ (PIL SOCKEL / REPL. PIL SOCKET<br>RICAMBIO ZOCCOLO PIL / RECHANGE SOCCLE PIL | 25 | 1,5 | 10,7 | 1,5 | 25 | 7 | 8300-020-390 |
| 22"/56CM | A 56-701 X | VIDEO COLOR | ○ CLEAR GLASS PIL | 24,6 | 1,5 | 9,6 | 1,33 | 25 | 2 | 8300-020-390 |
| 25"/63CM | A 59 EAK 00X 01 | PHILIPS | □ CLEAR GLASS 45 AX | 11 | 1,85 | 6,5 | 1,85 | 25 | 7,75 | 8300-020-400 |
| 25"/63CM | A 59 EAK 01X 01 | PHILIPS | □ TINTED GLASS 45 AX | 11 | 1,85 | 6,5 | 1,85 | 25 | 7,75 | 8300-020-401 |
| 25"/63CM | A 59 EAS 00X 01 | VIDEO COLOR | □ CLEAR GLASS FS 10 | 24,6 | 1,5 | 9,6 | 1,33 | 25 | 7,75 | 8300-020-405 |
| 26"/66CM | A 66-540 X | PHILIPS/<br>ELEKTRONSKA | ○ CLEAR GLASS 30 AX | 9,7 | 1,5 | 5,85 | 1,3 | 25 | 7 | 8300-030-540 |
| 28"/70CM | A 66 EAK 00X 01 | PHILIPS | □ CLEAR GLASS 45 AX | 11 | 1,85 | 6,5 | 1,85 | 25 | 7,75 | 8300-030-410 |
| 28"/70CM | A 66 EAK 01X 01 | PHILIPS | □ TINTED GLASS 45 AX | 11 | 1,85 | 6,5 | 1,85 | 25 | 7,75 | 8300-030-412 |
| 28"/70CM | A 66 EAK 50X 33 | PHILIPS | □ CLEAR GLASS 45 AX (32 KHZ) | 8,8 | 0,426 | 5,22 | 0,6 | 25 | 7,75 | 8300-030-433 |
| 28"/70CM | A 66 EAK 50X 32 | PHILIPS | □ CLEAR GLASS 45 AX (32 KHZ II. GENER.) | 6,5 | 0,426 | 3,9 | 0,6 | 25 | 7,75 | |
| 28"/70CM | A 66 EAK 50X 01 | PHILIPS | □ CLEAR GLASS 45 AX (II. GENER.) | 10,33 | 1,83 | 6,7 | 1,84 | 25 | 7,75 | |
| 28"/70CM | A 66 EAK 51X 01 | PHILIPS | □ TINTED GLASS 45 AX (II. GENER.) | 10,33 | 1,83 | 6,7 | 1,84 | 25 | 7,75 | 8300-030-435 |
| 28"/70CM | A 66 EAS 00X 01 | VIDEO COLOR | □ CLEAR GLASS FS 10 | 24,6 | 1,5 | 9,6 | 1,33 | 25 | 7,75 | 8300-030-411 |
| 28"/70CM | A 66 ECF 00X 01 | SEL | □ PLAN GON | 11 | 1,85 | 5,4 | 1,85 | 25 | 7,1 | |
| 32"/82CM | A 76 JTS 90X 03 (W) | TOSHIBA | □ TINTED GLASS | 24,6 | 1,5 | 9,6 | 1,26 | 29 | 8,1 | 8300-020-760 |
| 37"/95CM | A 89 JKA 81X | MITSUBISHI | □ TINTED GLASS ( I. GENER) | 19,0 | 0,8 | 6 | 0,89 | 30 | 7,4 | 8300-020-890 |
| 37"/95CM | A 89 JVU 11X | MITSUBISHI | □ TINTED GLASS (II. GENER.) | 14,5 | 0,8 | 7,5 | 0,81 | 30 | 7,4 | 8300-020-891 |




TP 660 29622-050.01
TC 660 -050.02
-050.03 IT
-050.04 FR
-050.05

29304-064.52 KEYBOARD




**KABEL-TUNER 29504-101.01**
**CABLE TV TUNER**
**TUNER TV CAVO**

**Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig**
**When replacing the plug-in board, no alignment is necessary**
**Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto**

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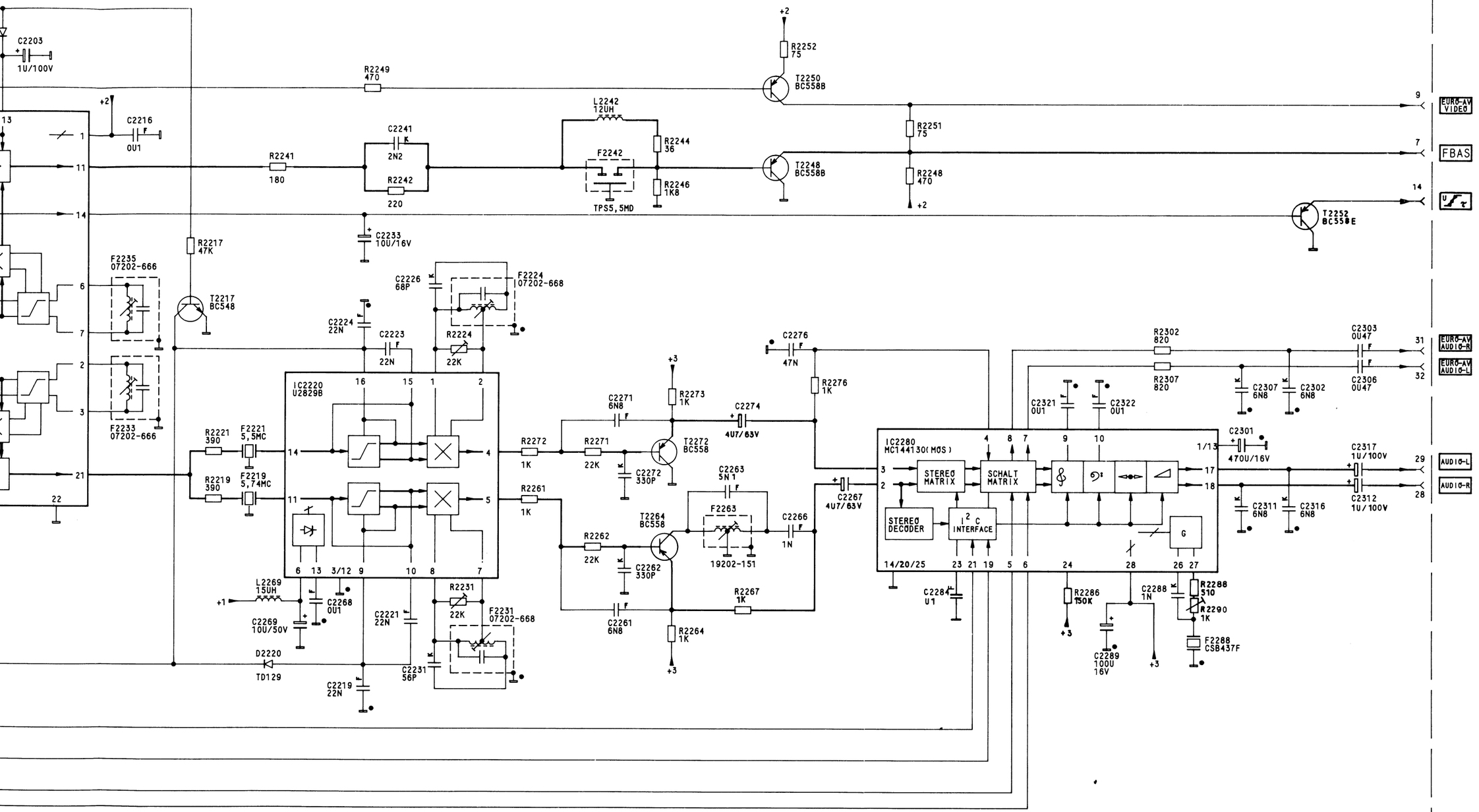
essary
po la

# ZF-VERSTAERKER 29504-102.07

IF-AMPLIFIER
AMPLI FI
AMPLIFICATORE FI

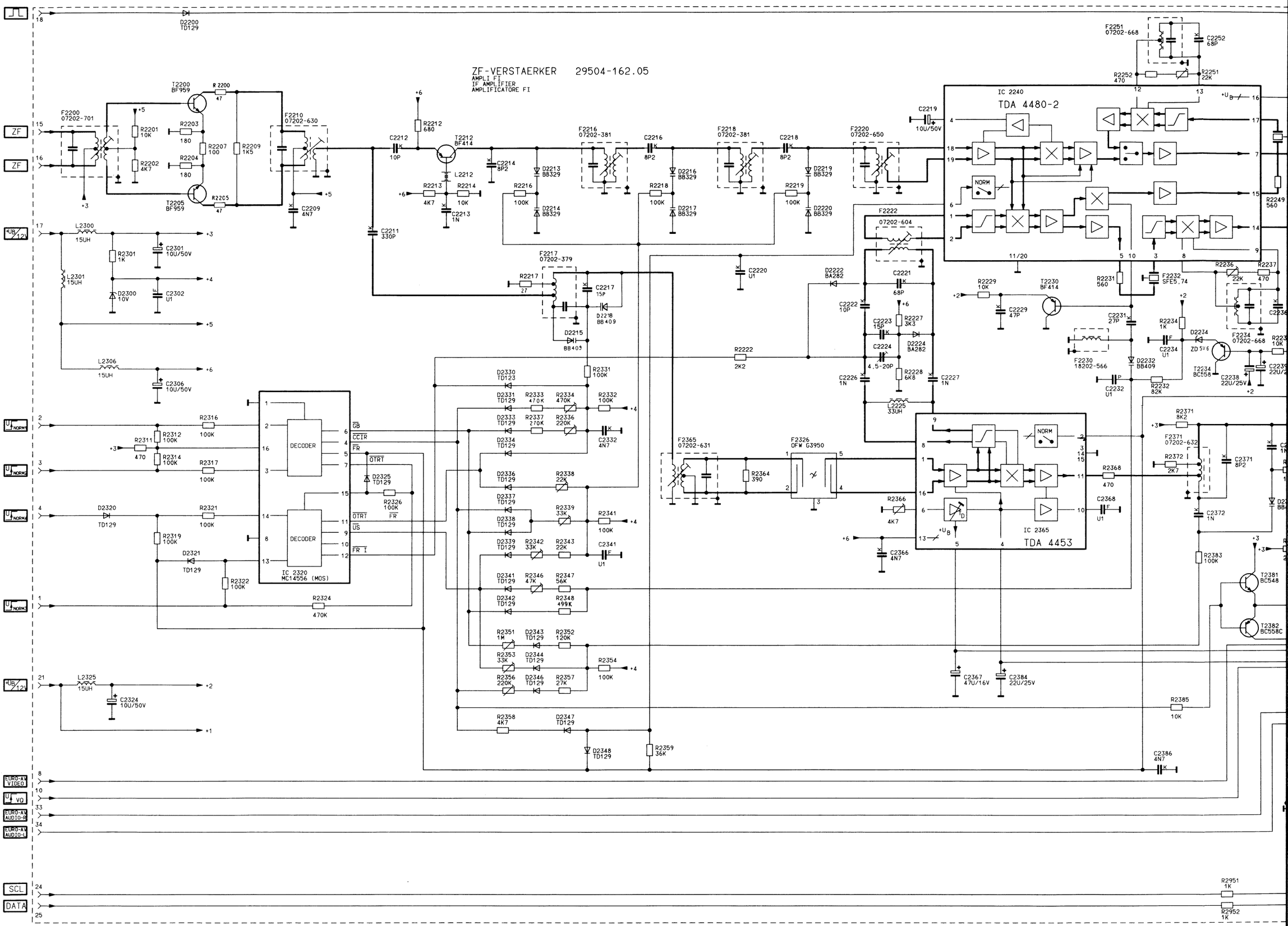


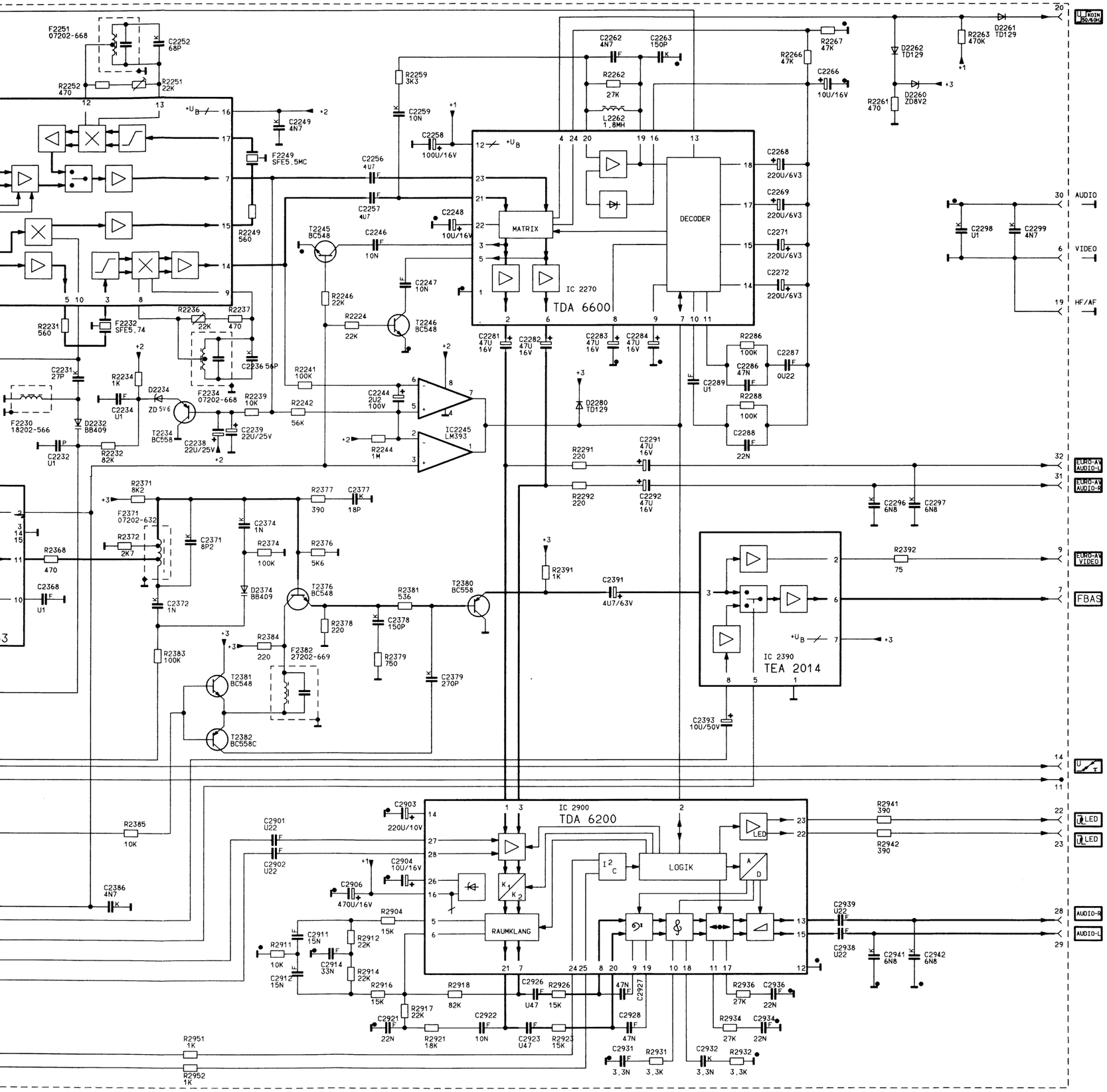

ZF-VERSTAERKER 29504-102.07
IF-AMPLIFIER
AMPLI FI
AMPLIFICATORE FI

**Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig**
**When replacing the plug-in board, no alignment is necessary**
**Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto**

# ZF-VERSTAERKER 29504-162.05

AMPLI FI
IF AMPLIFIER
AMPLIFICATORE FI






**Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig**
**When replacing the plug-in board, no alignment is necessary**
**Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto**

ZF-VERSTAERKER 29504-102.01
-102.04

IF AMPLIFIER
AMPLI FI
AMPLIFICATORE FI

U 2829 B
IC 2210

TDA 5830-2
IC 2200

TDA 6600
IC 2220

TDA 6200
IC 2280

MATRIX
DECODER
RAUMKLANG
SPATIAL SOUND
AUDIO SPAZIALE
LOGIK
LED

NUR BEI
ONLY WITH
SEUL. POUR
SOLO NELLA
-102.04

AUDIO
VIDEO
HF/AF
ZF
FBAS
AUDIO-R
AUDIO-L
SCL
SDA

**Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig**
**When replacing the plug-in board, no alignment is necessary**
**Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto**

ZF-VERSTAERKER 29504-102.02
-102.05

IF AMPLIFIER
AMPLI FI
AMPLIFICATORE FI

**Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig**
**When replacing the plug-in board, no alignment is necessary**
**Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto**

29305-008.07/.08
CINCH-BUCHSENPLATTE

PHONE SOCKET BOARD
C.I PRISES CINCH
PIASTRA PRESE CINCH

AUDIO
VIDEO
R291 680
C291 3,3N
R292 75
CH1

WAHLWEISE

AUDIO-R
AUDIO-L
VIDEO
R290 680
C290 3,3N
R291 680
C291 3,3N
R292 75
CH1

AUDIO-L
AUDIO-R
R293 120
C293 3,3N
R294 120
C294 3,3N

NUR BEI 29305-008 06
ONLY WITH
SEUL POUR/
SOLO NELLA

29305-008.05/.06
CINCH-BUCHSENPLATTE

PHONE SOCKET BOARD
C.I PRISES CINCH
PIASTRA PRESE CINCH

R201 4,7K
R202 4,7K
C201 0,1U +4
T201 BC548C
T202 BC548C
R203 100
R204 100
C204 4,7U/25V
C205 4,7U/25V
C203 4,7U/25V
R205 100K +2
+1
C211 10U/16V
C212 10U/16V
C213 10U/50V
C214 10U/50V
C216 2,2N
C217 2,2N
C218 0,1U +1
T223 BC338/40
R222 100
R221 75
R223 560
C221 2,2N
C222 2,2N
C223 10U/16V +1
T217 BC338/40
R218 100
R216 75
R217 560
1 3 5 7 9 11 13 15 17 19 21
2 4 6 8 10 12 14 16 18 20
EURO-AV-BUCHSE
EURO-AV-SOCKET
EMBASE PERI-TV
PRESA EURO-AV
C231 2,2N
R231 100K +2
R236 75
C232 2,2N
R232 100K +2
C233 4,7U/25V
R237 75
R238 75
C237 2,2N
C272 2,2N
C238 4,7U/63V
C273 4,7U/63V
R273 100K +2
IC 230 CD4053 (MOS)
R271 75
R263 1K
R264 75
R262 100K +2
C271 10U/16V
R272 100K +2
R277 75
C277 10U/50V
R278 100K +2
IC 240 CD4053 (MOS)
R266 100K +2
C266 4,7U/25V
R261 100K +2
R276 100K +2
C275 10U/50V
C279 10U/16V
IC 270 TEA2014
IC 260 CD4053 (MOS)
R281 100K +2
D282 TD129 +4
D286 BAT42 +1
+1
D288 BAT42
R282 100K
R286 150K
R283 150K
R288 1K
D283 TD129
D287 TD129
D281 TD129
R284 100K
R299 12
R297 10K
R298 3K
C297 47U/10V +2
C296 220U/16V +3
R296 470
D298 TD190
+4 +1 +2 +3
R242 22K +3
C246 0,1U
R243 18K
R244 22K
C244 2,2N
R246 18K
C243 1N
C242 1N
R249 18K
R250 22K +3
C247 0,1U
R248 18K
R247 22K
C248 2,2N
IC 280 RC4559N
R251 390
C251 22U/25V
R252 3,9K
C252 4,7U/63V
R254 10K
C256 4,7U/63V
R256 3,9K
R257 10K
R259 390
C259 22U/25V
CH
8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

EURO-AV-BUCHSENPLATTE 29304-060.43

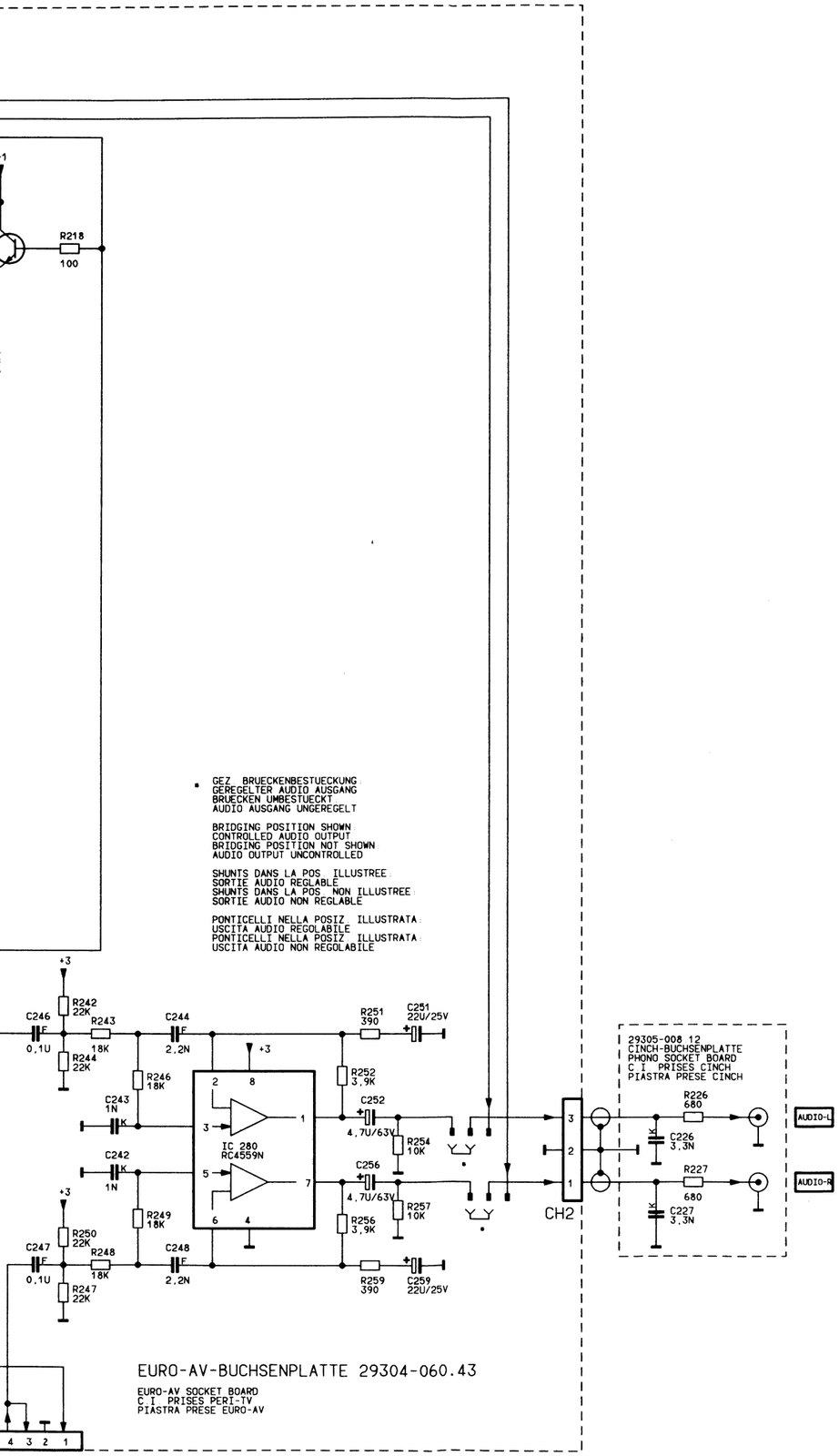
EURO-AV SOCKET BOARD
C.I. PRISES PERI-TV
PIASTRA PRESE EURO-AV

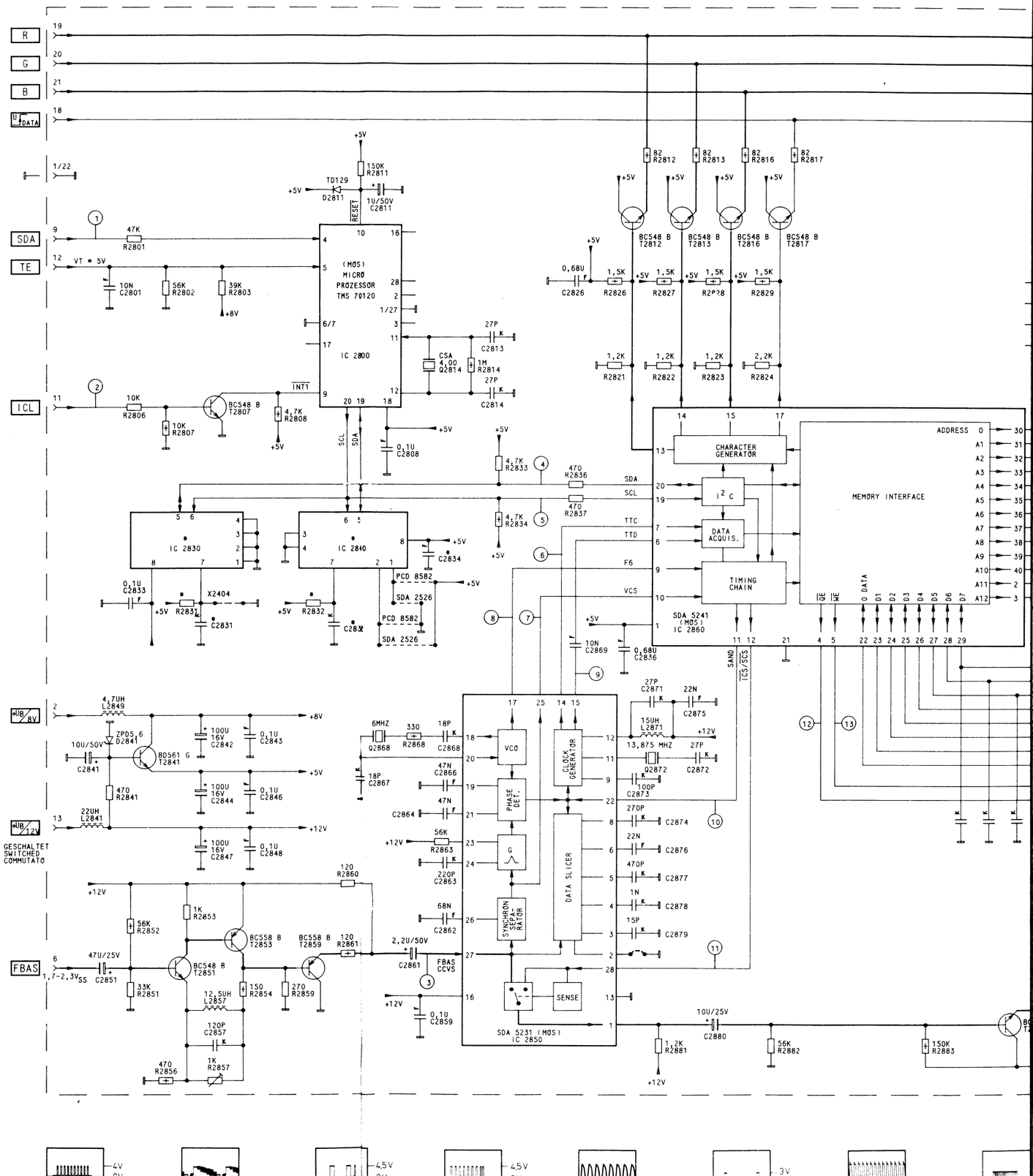
GEZ. BRUECKENBESTUECKUNG
GEREGELTER AUDIO AUSGANG
BRUECKEN UMBESTUECKT
AUDIO AUSGANG UNGEREGELT

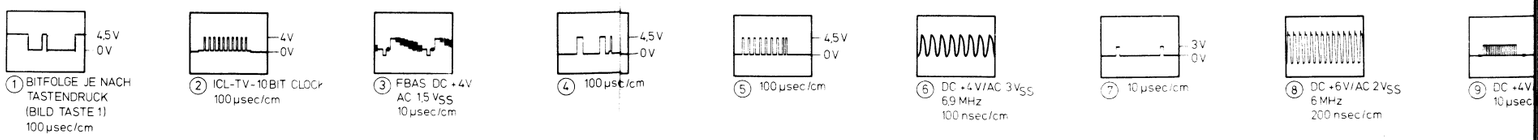
BRIDGING POSITION SHOWN
CONTROLLED AUDIO OUTPUT
BRIDGING POSITION NOT SHOWN
AUDIO OUTPUT UNCONTROLLED

SHUNTS DANS LA POS. ILLUSTREE
SORTIE AUDIO REGLABLE
SHUNTS DANS LA POS. NON ILLUSTREE
SORTIE AUDIO NON REGLABLE

PONTICELLI NELLA POSIZ. ILLUSTRATA
USCITA AUDIO REGOLABILE
PONTICELLI NELLA POSIZ. ILLUSTRATA
USCITA AUDIO NON REGOLABILE


R218
100
GEZ. BRUECKENBESTUECKUNG
GEREGELTER AUDIO AUSGANG
BRUECKEN UMBESTUECKT
AUDIO AUSGANG UNGEREGELT
BRIDGING POSITION SHOWN
CONTROLLED AUDIO OUTPUT
BRIDGING POSITION NOT SHOWN
AUDIO OUTPUT UNCONTROLLED
SHUNTS DANS LA POS. ILLUSTREE
SORTIE AUDIO REGLABLE
SHUNTS DANS LA POS. NON ILLUSTREE
SORTIE AUDIO NON REGLABLE
PONTICELLI NELLA POSIZ. ILLUSTRATA
USCITA AUDIO REGOLABILE
PONTICELLI NELLA POSIZ. ILLUSTRATA
USCITA AUDIO NON REGOLABILE
+3
R242 22K
C246 0,1U
R243 18K
R244 22K
C244 2,2N
R246 18K
C243 1N
C242 1N
R249 18K
R250 22K
C247 0,1U
R248 18K
R247 22K
C248 2,2N
IC 280 RC4559N
2 8 3 1 5 7 6 4
R251 390
C251 22U/25V
R252 3,9K
C252 4,7U/63V
R254 10K
C256 4,7U/63V
R257 10K
R256 3,9K
R259 390
C259 22U/25V
CH2
3 2 1
29305-008 12
CINCH-BUCHSENPLATTE
PHONO SOCKET BOARD
C.I. PRISES CINCH
PIASTRA PRESE CINCH
R226 680
C226 3,3N
R227 680
C227 3,3N
AUDIO-L
AUDIO-R
4 3 2 1
EURO-AV-BUCHSENPLATTE 29304-060.43
EURO-AV SOCKET BOARD
C.I. PRISES PERI-TV
PIASTRA PRESE EURO-AV

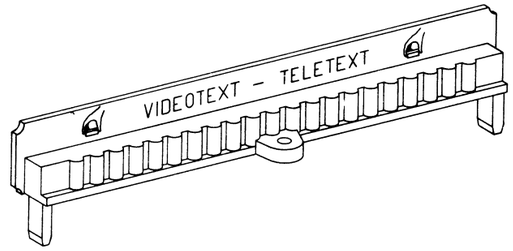

R
G
B
U DATA
1/22
SDA
TE
ICL
47K R2801
10N C2801
56K R2802
39K R2803
+8V
VT = 5V
10K R2806
10K R2807
BC548 B T2807
4,7K R2808
INT1
IC 2800
(MOS) MICRO PROZESSOR TMS 70120
RESET
150K R2811
TD129 D2811
1U/50V C2811
0,1U C2808
SCL
SDA
27P C2813
CSA 4,00 Q2814
1M R2814
27P C2814
82 R2812
82 R2813
82 R2816
82 R2817
BC548 B T2812
BC548 B T2813
BC548 B T2816
BC548 B T2817
0,68U C2826
1,5K R2826
1,5K R2827
1,5K R2828
1,5K R2829
1,2K R2821
1,2K R2822
1,2K R2823
2,2K R2824
CHARACTER GENERATOR
I²C
DATA ACQUIS.
TIMING CHAIN
MEMORY INTERFACE
ADDRESS 0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
0 DATA
D1
D2
D3
D4
D5
D6
D7
OE
WE
SDA 5241 (MOS) IC 2860
4,7K R2833
4,7K R2834
470 R2836
470 R2837
TTC
TTD
F6
VCS
IC 2830
IC 2840
X2404
C2831
C2832
C2833
C2834
R2831
R2832
PCD 8582
SDA 2526
10N C2869
0,68U C2836
SAND
TCS/SCS
+UB 8V
+UB 12V
GESCHALTET
SWITCHED
COMMUTATO
4,7UH L2849
ZPDS,6 D2841
BD561 G T2841
10U/50V C2841
470 R2841
22UH L2841
100U 16V C2842
0,1U C2843
100U 16V C2844
0,1U C2846
100U 16V C2847
0,1U C2848
+8V
+5V
+12V
6MHZ Q2868
330 R2868
18P C2868
18P C2867
47N C2866
47N C2864
56K R2863
220P C2863
68N C2862
2,2U/50V C2861
0,1U C2859
120 R2860
VCO
PHASE DET.
G
SYNCHRON SEPA-RATOR
DATA SLICER
CLOCK GENERATOR
SENSE
SDA 5231 (MOS) IC 2850
27P C2871
22N C2875
15UH L2871
13,875 MHZ Q2872
27P C2872
100P C2873
270P C2874
22N C2876
470P C2877
1N C2878
15P C2879
10U/25V C2880
1,2K R2881
56K R2882
150K R2883
FBAS
47U/25V
1,7-2,3VSS C2851
56K R2852
1K R2853
BC558 B T2853
BC548 B T2851
BC558 B T2859
120 R2861
33K R2851
150 R2854
270 R2859
12,5UH L2857
120P C2857
470 R2856
1K R2857
FBAS CCVS

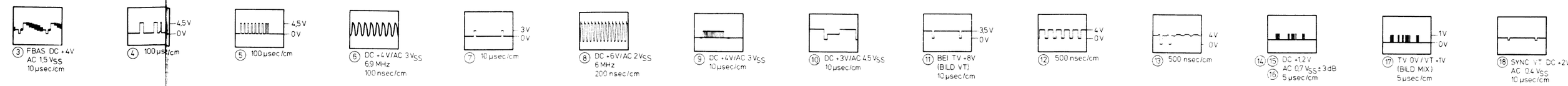

4,5V
0V
1 BITFOLGE JE NACH TASTENDRUCK (BILD TASTE 1) 100 µsec/cm
4V
0V
2 ICL-TV-10BIT CLOCK 100 µsec/cm
3 FBAS DC +4V AC 1,5 VSS 10 µsec/cm
4 100 µsec/cm
5 100 µsec/cm
6 DC +4V/AC 3VSS 6,9 MHz 100 nsec/cm
3V
0V
7 10 µsec/cm
8 DC +6V/AC 2VSS 6 MHz 200 nsec/cm
9 DC +4V 10 µsec

VIDEOTEXT - DECODER 29504-108.05

TELETEXT DECODER
DECODER TELEVIDEO

| • | IC 2830 | IC 2840 | C 2831 | C 2832 | C 2834 | R 2831 | R 2832 |
|---|---|---|---|---|---|---|---|
| | PCD 8582 E²PROM(2K) | PCD 8282 E²PROM(2K) | 2,7N | 2,7N | 0,1U | 10K | 10K |
| | SDA 2526 E²PROM(2K) | SDA 2526 E²PROM(2K) | —— | —— | 0,1U | —— | —— |
| | X 2404P E²PROM(4K) | —— | —— | —— | —— | —— | —— |





③ FBAS DC +4V AC 1,5 VSS 10 µsec/cm
④ 100 µsec/cm
4,5V 0V
⑤ 100 µsec/cm
4,5V 0V
⑥ DC +4V/AC 3 VSS 6,9 MHz 100 nsec/cm
⑦ 10 µsec/cm
3V 0V
⑧ DC +6V/AC 2 VSS 6 MHz 200 nsec/cm
⑨ DC +4V/AC 3 VSS 10 µsec/cm
⑩ DC +3V/AC 4,5 VSS 10 µsec/cm
⑪ BEI TV +8V (BILD VT) 10 µsec/cm
3,5V 0V
⑫ 500 nsec/cm
4V 0V
⑬ 500 nsec/cm
4V 0V
⑭⑮ DC +1,2V
⑯ AC 0,7 VSS ± 3dB 5 µsec/cm
⑰ TV 0V / VT +1V (BILD MIX) 5 µsec/cm
1V 0V
⑱ SYNC VT DC +2V AC 0,4 VSS 10 µsec/cm

## VT-Nachrüstung und Anpassungsabgleich

Beim Nachrüsten der Videotext-Steckkarte muß die Videotext-Steckerplatte entfernt werden.

Der Einsteller R 2857 steht bei Auslieferung auf Linksanschlag (kleinste Höhenanhebung, ca. 2 dB). Treten trotz einwandfreiem Antennensignal Zeichenfehler auf, R 2857 langsam nach rechts verstellen, bis Fehler verschwinden. Nicht weiterdrehen, da Fehlerhäufigkeit wieder zunehmen kann.

Während des Abgleiches ist es notwendig, die Seite 199 ständig neu anzuwählen, da nur so die Seite neu eingelesen wird und eine Beurteilung der Fehlerschwelle möglich ist.

## VT (GB: Teletext) instalation and matching adjustment

When fitting the Videotext (GB: Teletext) plug-in board, the Videotext plug plate has to be removed.

The control R 2857 is set in the fully anti clockwise position when the unit is delivered (smallest treble boost: approx. 2 dB). If, with a perfect aerial signal character faults occur, turn R 2857 slowly clockwise until the faults disappear. Do not turn R 2875 up any further as error rate may increase again.

Page 199 must always be selected anew during the adjustment, as only this effects a new read-in of the page making it possible to evaluate the error level.

## Montaggio e taratura d'addatamento della scheda ad innesto

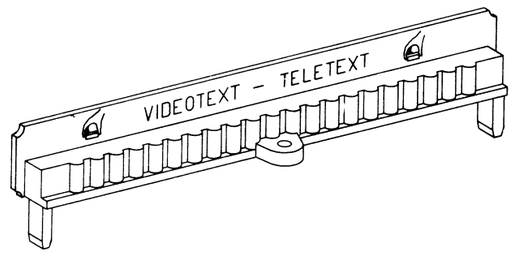
Nel montare la scheda televideo togliere la piastrina televideo.

Il regolatore R 2857 viene fornito col cursore girato completamente all'estrema sinistra (minima esaltazione delle alte frequenze, ca. 2 dB). Se si manifestano errori di carattere, nonostante un perfetto segnale d'antenna, girare lentamente il cursore di R 2857 verso destra fino ad eliminare gli errori. Non girarlo oltre può riaumentare la presenza degli errori.

Durante la taratura è necessario selezionare ripetutamente la pagina 199, poiché solo così è possibile una nuova immissione della pagina ed una valutazione della soglia degli errori.

VIDEOTEXT - DECODER 29504-108.05
TELETEXT DECODER
DECODER TELEVIDEO

| * | IC 2830 | IC 2840 | C 2831 | C 2832 | C 2834 | R 2831 | R 2832 |
|---|---|---|---|---|---|---|---|
| | PCD 8582 E²PROM(2K) | PCD 8282 E²PROM(2K) | 2,7N | 2,7N | 0,1U | 10K | 10K |
| | SDA 2526 E²PROM(2K) | SDA 2526 E²PROM(2K) | —— | —— | 0,1U | —— | —— |
| | X 2404P E²PROM(4K) | —— | —— | —— | —— | —— | —— |




③ FBAS DC +4V AC 1,5 $V_{SS}$ 10 µsec/cm

④ 4,5V 0V 100 µsec/cm

⑤ 4,5V 0V 100 µsec/cm

⑤ DC +4V/AC 3 $V_{SS}$ 6,9 MHz 100 nsec/cm

⑦ 3V 0V 10 µsec/cm

⑧ DC +6V/AC 2 $V_{SS}$ 6 MHz 200 nsec/cm

⑨ DC +4V/AC 3 $V_{SS}$ 10 µsec/cm

⑩ DC +3V/AC 4,5 $V_{SS}$ 10 µsec/cm

⑪ BEI TV +8V (BILD VT) 10 µsec/cm

⑫ 3,5V 0V 500 nsec/cm

⑬ 4V 0V 500 nsec/cm

⑭⑮⑯ DC +1,2V AC 0,7 $V_{SS}$ = 3 dB 5 µsec/cm

⑰ 1V 0V TV 0V/VT +1V (BILD MIX) 5 µsec/cm

⑱ SYNC VT DC +2V AC 0,4 $V_{SS}$ 10 µsec/cm

## VT-Nachrüstung und Anpassungsabgleich

Beim Nachrüsten der Videotext-Steckkarte muß die Videotext-Steckerplatte entfernt werden.

Der Einsteller R 2857 steht bei Auslieferung auf Linksanschlag (kleinste Höhenanhebung, ca. 2 dB). Treten trotz einwandfreiem Antennensignal Zeichenfehler auf, R 2857 langsam nach rechts verstellen, bis Fehler verschwinden. Nicht weiterdrehen, da Fehlerhäufigkeit wieder zunehmen kann.

Während des Abgleiches ist es notwendig, die Seite 199 ständig neu anzuwählen, da nur so die Seite neu eingelesen wird und eine Beurteilung der Fehlerschwelle möglich ist.

## VT (GB: Teletext) instalation and matching adjustment

When fitting the Videotext (GB: Teletext) plug-in board, the Videotext plug plate has to be removed.

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Page 199 must always be selected anew during the adjustment, as only this effects a new read-in of the page making it possible to evaluate the error level.

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Nel montare la scheda televideo togliere la piastrina televideo.

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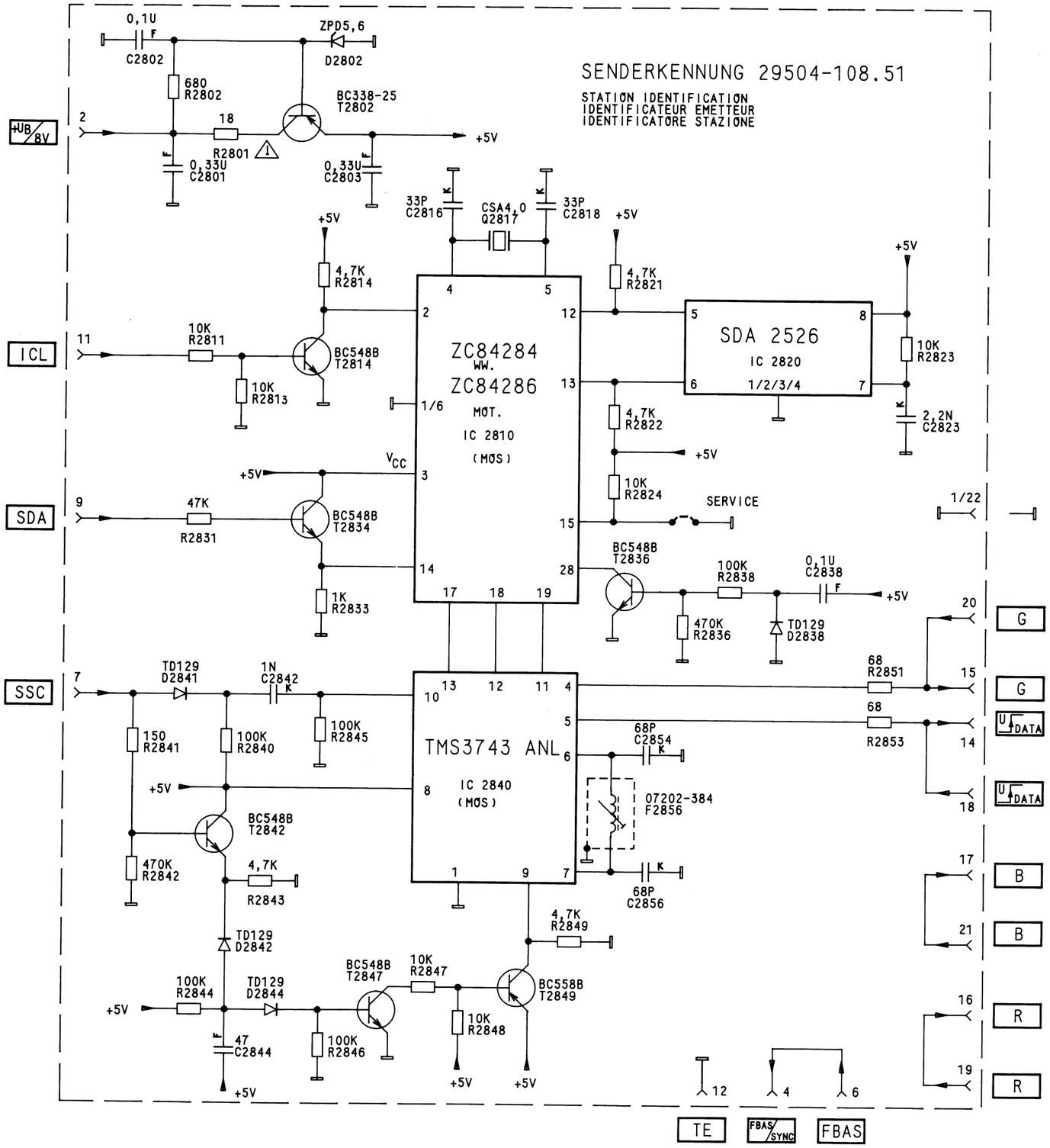
Durante la taratura è necessario selezionare ripetutamente la pagina 199, poiché solo così è possibile una nuova immissione della pagina ed una valutazione della soglia degli errori.

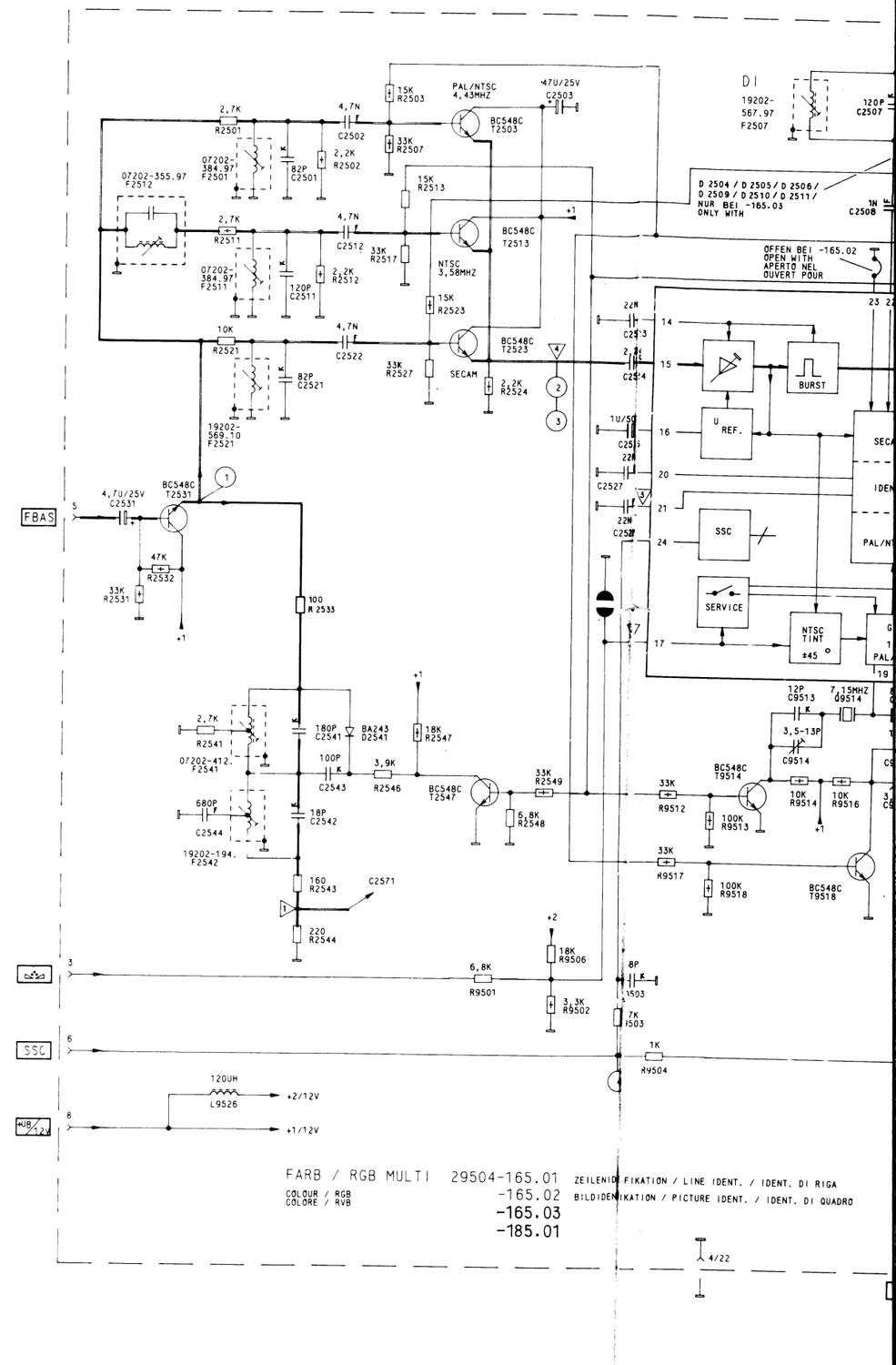
## SENDERKENNUNG 29504-108.51

STATION IDENTIFICATION
IDENTIFICATEUR EMETTEUR
IDENTIFICATORE STAZIONE




**Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig**
**When replacing the plug-in board, no alignment is necessary**
**Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto**





| | NO | |
|---|---|---|
| | 1 | 2 |
| PAL | 1 | 0 |
| SECAM | 0 | 1 |
| NTSC | 1 | 1 |

D 2504 / D 2505 / D 2506 / D 2509 / D 2510 / D 2511 / NUR BEI -165.03 ONLY WITH

OFFEN BEI -165.02 OPEN WITH APERTO NEL OUVERT POUR

NORM ZWANG STANDARD ENFORCE

TDA 4555 IC 2555

TDA 3505 IC 9531

(TDA 4565 S1) TDA 4565 IC 2581

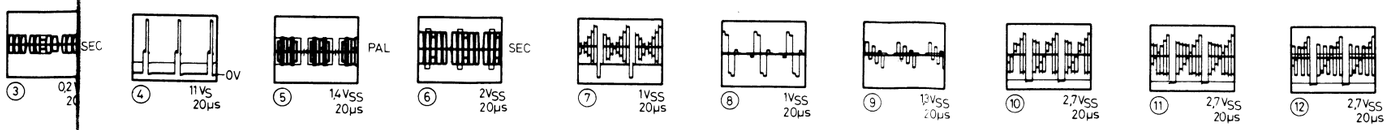
SPEICHER STUFE MEMORY STAGE

560...840NS

80NS

BILDROHRRLATTE CRT BASE

65.01 ZEILENIDENTIFIKATION / LINE IDENT. / IDENT. DI RIGA
65.02 BILDIDENTIFIKATION / PICTURE IDENT. / IDENT. DI QUADRO
65.03
65.01





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4. **Strahl**
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1. **White**
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2. **Adjust**
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3. **Adjust**
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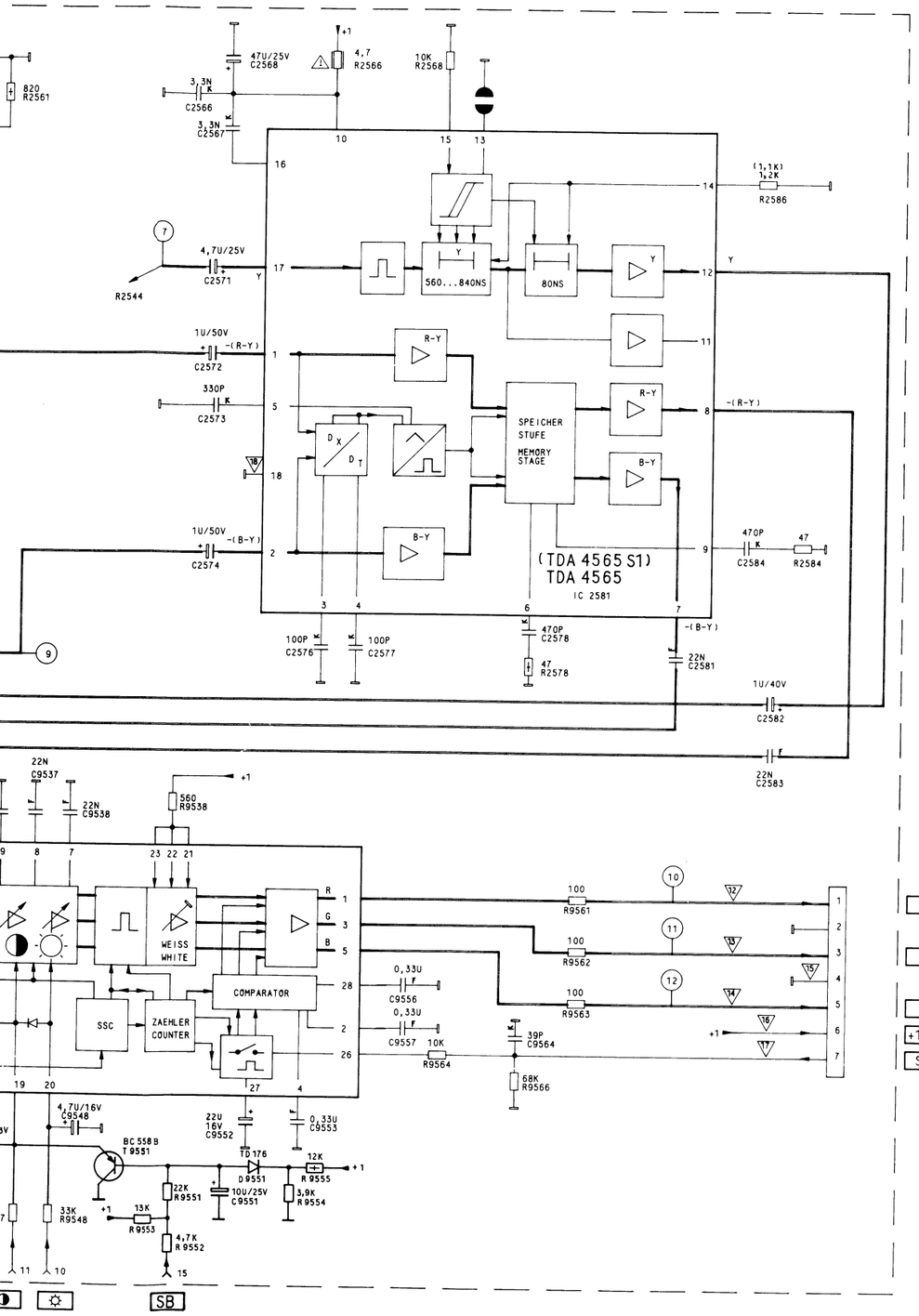
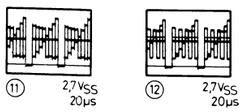








**1. Weißabgleich**
- FuBK-Testbild einspeisen.
- ◑min., ☼nom, ◑max. einstellen.
- Regler VG und VB (Bildrohrplatte) so einstellen, daß keine Verfärbungen in den Grauwerten sichtbar sind.

**2. Sperrpunktabgleich**

Eine manuelle Einstellung ist nicht möglich, da die Steckkarte eine automatische Dunkelstromregelung besitzt. Kontrolle des Sperrpunkts (Oszilloskop erforderlich).
- FuBK-Testbild einspeisen.
- ◑min., ☼nom., ◑min., einstellen.
- Tastkopf an den Kollektoren der Transistoren T 736, T 756, T 776 anhängen (Bildrohrplatte). Die Schwarzwerte der drei Kathodensignale liegen bei ca. 140-150V.

**3. Einstellungen im Farbkanal**
- PAL-Testbild einspeisen.
- FK nom., H nom. K max. einstellen.
- IC-Pin 28 vom TDA 4555 mit +12V verbinden.
- IC-Pin 17 vom TDA 4555 mit Masse verbinden.
- Mit Trimmer C9516 die durchlaufenden Farbbalken zum Stehen bringen.
- Kurzschlußbrücken entfernen.
- Tastkopf an MP 12, mit Regler BP und Spule LZ die Doppelbilder des B-Signals zur Deckung bringen.
- NTSC-Testbild 3.5 MHz einspeisen.
- IC-Pin 26 vom TDA 4555 mit +12V verbinden.
- IC-Pin 17 vom TDA 4555 mit Masse verbinden.
- Mit Trimmer C9514 die durchlaufenden Farbbalken zum Stehen bringen.
- Kurzschlußbrücken entfernen.
- SECAM-Testbild einspeisen.
- Tastkopf an Pin 1 vom TDA 4555 anschließen, mit Spule DR Nullinie des (R-Y)-Signals auf Zeilenniveau bringen.
- Tastkopf an Pin 3 vom TDA 4555 anschließen, mit Spule DB Nullinie des (B-Y)-Signals auf Zeilentastniveau bringen.
- Spule F 2521 so einstellen, daß das (B-Y)-Signal keine Überschwinger hat.

**4. Strahlstrom**
- Der Regler "SSB" wird werkseitig auf Mittelwert eingestellt.
- Sollte bei vollem Kontrast und normal eingestellter Helligkeit in Spitzenweißfeldern des Sendertestbildes eine Defokussierung (starke Unschärfe bei weißen Schriftzeichen in Bildröhrenmitte) auftreten, so muß mit Regler "SSB" auf scharfe Schriftkonturen eingestellt werden (Reduzierung des Spitzenstrahlstromes).

**1. White level adjustment**
- Display colour bar test pattern.
- Set ◑ to min., ☼ to nom., ◑ to max.
- Adjust presets VG and VB (CRT socket board) so that the picture does not show any colouration.

**2. Adjustment of cut-off point**

Manual adjustment is not possible, as the circuit board employs an automatic dark current control circuit.
To check cut-off point (oscilloscope required), proceed as follows:
- Display colour bar test pattern.
- Set ◑ to min., ☼ to nom., ◑ to min.
- Connect test probe to collectors of T 736, T 756, T 776 (CRT socket board).
  The black leves of the three cathode signals should be 140-150V.

**3. Adjustments in chroma channel**
- Display PAL test pattern.
- Adjust colour level and brightness to nominal value, contrast to maximum.
- Connect pin 28 of IC TDA 4555 to +12V supply.
- Connect pin 17 to IC TDA 4555 to chassis.
- Adjust trimmer C9516 for stationary pattern in colour bars.
- Remove wire links.
- Connect test probe to test point MP 12. LBring the double image produced by the B-signal to coincidence by adjusting the preset BP and the coil LZ.
- Display 3.5 MHz NTSC test pattern.
- Connect pin 26 of IC TDA 4555 to +12V supply.
- Connect pin 17 of IC TDA 4555 to chassis.
- Adjust trimmer C 9514 for stationary pattern in colour bars.
- Remove wire links.
- Display SECAM test pattern.
- Connect test probe to pin 1 of IC TDA 4555.
- Use coil DR to align zero level of the (R-Y) signal with the line black level.
- Connect test probe to pin 3 of IC TDA 4555.
- Use coil DB to align zero level of the (B-Y) signal with the line black level.
- Adjust coil F2521 so that the (B-Y) signal is free of overshooting.

**4. Beam current**
- During manufacture the control "SSB" is adjusted to middle value.
- If during max. contrast and normal brightness adjustment the peak-white fields of the test picture should be defocused (in the middle of the screen white letters are very distorted) the contours of the letters must be adjusted using control "SSB" (reducing the peak beam current).

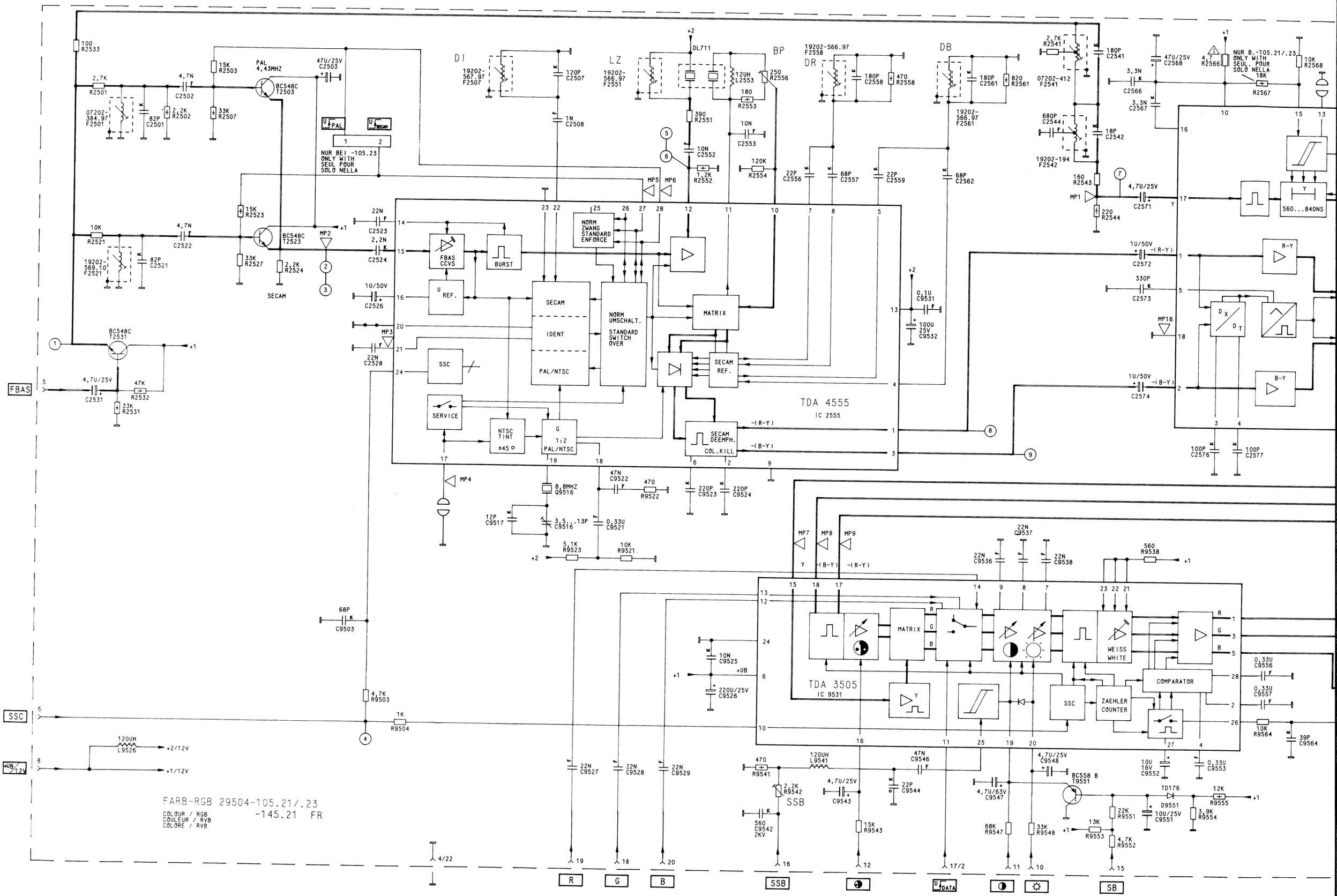
**1. Taratura del bianco**
- Applicare un monoscopio FuBK.
- Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al massimo.
- Con i regolatori VG e VB (piastra cinescopio) eliminare eventuali macchie di colore.

**2. Taratura del punto di blocco**

Una regolazione manuale non è possibile, poiché questa scheda incorpora una regolazione automatica della corrente d'interdizione.
Controllo del punto di blocco (é necessario un oscilloscopio):
- Applicare un monoscopio FuBK.
- Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al minimo.
- Collegare la sonda ai collettori dei transistori T 736, T 756, T 776 (piastra cinescopio).
  Valore nero dei tre segnali catodici ca. 140-150V.

**3. Regolazione del canale colore**
- Applicare un monoscopio PAL.
- Regolare FK e H sul valore nominale, K al massimo.
- Sull'integrato TDA 4555 collegare pin 28 a +12V.
- Sull'integrato TDA 4555 collegare pin 17 a massa.
- Con C9516 fermare le barre colorate scorrevoli.
- Togliere i cortocircuiti.
- Collegare la sonda a MP 12, con il regolatore BP e la bobina LZ portare a copertura le immagini doppie del segnale B.
- Applicare un monoscopio NTSC 3,5 MHz.
- Sull'integrato TDA 4555 collegare pin 26 a +12V.
- Sull'integrato TDA 4555 collegare pin 17 a massa.
- Con C9514 fermare le barre colorate scorrevoli.
- Togliere i cortocircuiti.
- Applicare un monoscopio SECAM.
- Collegare la sonda al pin 1 dell'integrato TDA 4555, con la bobina DR portare la linea zero del segnale (R-Y) sul livello della frequenza di riga.
- Collegare la sonda al pin 3 dell'integrato TDA 4555, con la bobina DB portare la linea zero del segnale (B-Y) sul livello della frequenza di riga.
- La bobina F2581 applicarla cosi in modo che il segnale (B-Y) sia chiaro.

**4. Corrente catodica**
- Il regolatore "SSB" viene regolato già in fabbrica su valori medi.
- Se con il contrasto al massimo ed una regolazione normale della luminosità dovesse presentarsi una sfocalizzazione nei campi ultrabianchi del cinescopio (le lettere bianche al centro del cinescopio risultano molto sfuocate), agire sul regolatore "SSB" per mettere a fuoco i contorni delle lettere (riducendo la corrente catodica di picco).


TDA 4555
IC 2555
TDA 3505
IC 9531
FARB-RGB 29504-105.21/.23
-145.21 FR
COLOUR / RGB
COULEUR / RVB
COLORE / RVB
PAL 4,43MHZ
SECAM
NUR BEI -105.23
ONLY WITH
SEUL POUR
SOLO NELLA
NUR B.-105.21/.23
ONLY WITH
SEUL POUR
SOLO NELLA
FBAS CCVS
BURST
U REF.
SECAM
IDENT
PAL/NTSC
NORM UMSCHALT.
STANDARD SWITCH OVER
NORM ZWANG STANDARD ENFORCE
SSC
SERVICE
NTSC TINT ±45°
G 1:2 PAL/NTSC
MATRIX
SECAM REF.
SECAM DEEMPH. COL.KILL
-(R-Y)
-(B-Y)
R-Y
B-Y
Y
560...840NS
DX/DT
WEISS WHITE
COMPARATOR
ZAEHLER COUNTER
SSB
DI
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DB
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SSC
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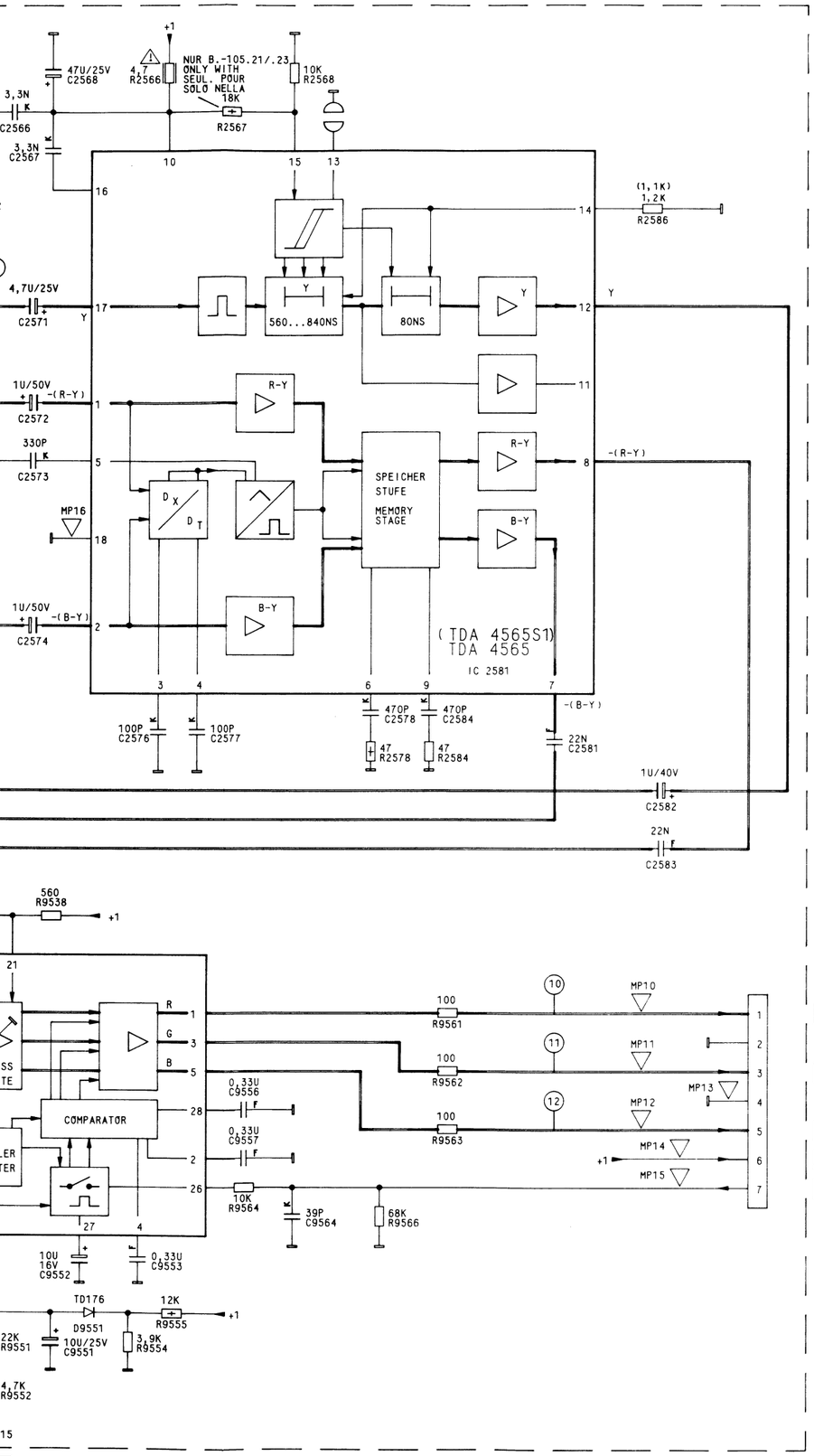
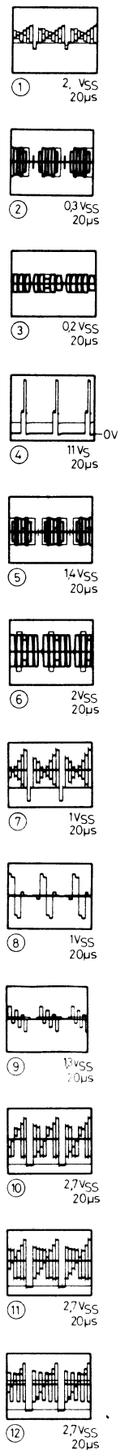



1. **Weißabgleich**
   - FuBK-Testbild einspeisen.
   - ◑min., ☼nom, ◑max. einstellen.
   - Regler VG und VB (Bildrohrplatte) so einstellen, daß keine Verfärbungen in den Grauwerten sichtbar sind.

2. **Sperrpunktabgleich**
   Eine manuelle Einstellung ist nicht möglich, da die Steckkarte eine automatische Dunkelstromregelung besitzt. Kontrolle des Sperrpunkts (Oszilloskop erforderlich).
   - FuBK-Testbild einspeisen.
   - ◑min., ☼nom., ◑min., einstellen.
   - Tastkopf an den Kollektoren der Transistoren T 736, T 756, T 776 anhängen (Bildrohrplatte). Die Schwarzwerte der drei Kathodensignale liegen bei ca. 140-150V.

3. **Einstellungen im Farbkanal**
   - PAL-Testbild einspeisen.
   - FK nom., H nom. K max. einstellen.
   - IC-Pin 28 vom TDA 4555 mit +12V verbinden.
   - IC-Pin 17 vom TDA 4555 mit Masse verbinden.
   - Mit Trimmer C9516 die durchlaufenden Farbbalken zum Stehen bringen.
   - Kurzschlußbrücken entfernen.
   - Tastkopf an MP 12, mit Regler BP und Spule LZ die Doppelbilder des B-Signals zur Deckung bringen.
   - SECAM-Testbild einspeisen.
   - Tastkopf an Pin 1 vom TDA 4555 anschließen, mit Spule DR Nullinie des (R-Y)-Signals auf Zeilenniveau bringen.
   - Tastkopf an Pin 3 vom TDA 4555 anschließen, mit Spule DB Nullinie des (B-Y)-Signals auf Zeilentastniveau bringen.
   - Spule F 2521 so einstellen, daß das (B-Y)-Signal keine Überschwinger hat.

4. **Strahlstrom**
   - Der Regler "SSB" wird werkseitig auf Mittelwert eingestellt.
   - Sollte bei vollem Kontrast und normal eingestellter Helligkeit in Spitzenweißfeldern des Sendertestbildes eine Defokussierung (starke Unschärfe bei weißen Schriftzeichen in Bildröhrenmitte) auftreten, so muß mit Regler "SSB" auf scharfe Schriftkonturen eingestellt werden (Reduzierung des Spitzenstrahlstromes).

1. **White level adjustment**
   - Display colour bar test pattern.
   - Set ◑ to min., ☼ to nom., ◑ to max.
   - Adjust presets VG and VB (CRT socket board) so that the picture does not show any colouration.

2. **Adjustment of cut-off point**
   Manual adjustment is not possible, as the circuit board employs an automatic dark current control circuit.
   To check cut-off point (oscilloscope required), proceed as follows:
   - Display colour bar test pattern.
   - Set ◑ to min., ☼ to nom., ◑to min.
   - Connect test probe to collectors of T 736, T 756, T 776 (CRT socket board).
     The black leves of the three cathode signals should be 140-150V.

3. **Adjustments in chroma channel**
   - Display PAL test pattern.
   - Adjust colour level and brightness to nominal value, contrast to maximum.
   - Connect pin 28 of IC TDA 4555 to +12V supply.
   - Connect pin 17 to IC TDA 4555 to chassis.
   - Adjust trimmer C9516 for stationary pattern in colour bars.
   - Remove wire links.
   - Connect test probe to test point MP 12. LBring the double image produced by the B-signal to coincidence by adjusting the preset BP and the coil LZ.
   - Display SECAM test pattern.
   - Connect test probe to pin 1 of IC TDA 4555.
   - Use coil DR to align zero level of the (R-Y) signal with the line black level.
   - Connect test probe to pin 3 of IC TDA 4555.
   - Use coil DB to align zero level of the (B-Y) signal with the line black level.
   - Adjust coil F2521 so that the (B-Y) signal is free of overshooting.

4. **Beam current**
   - During manufacture the control "SSB" is adjusted to middle value.
   - If during max. contrast and normal brightness adjustment the peak-white fields of the test picture should be defocused (in the middle of the screen white letters are very distorted) the contours of the letters must be adjusted using control "SSB" (reducing the peak beam current).

1. **Taratura del bianco**
   - Applicare un monoscopio FuBK.
   - Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al massimo.
   - Con i regolatori VG e VB (piastra cinescopio) eliminare eventuali macchie di colore.

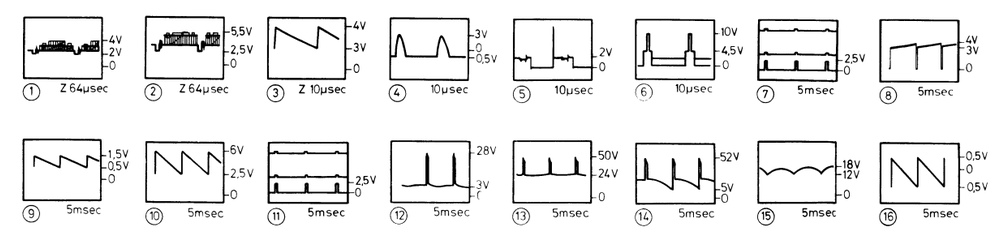
2. **Taratura del punto di blocco**
   Una regolazione manuale non è possibile, poiché questa scheda incorpora una regolazione automatica della corrente d'interdizione.
   Controllo del punto di blocco (é necessario un oscilloscopio):
   - Applicare un monoscopio FuBK.
   - Regolare ◑ al minimo, ☼ sul valore nominale e ◑ al minimo.
   - Collegare la sonda ai collettori dei transistori T 736, T 756, T 776 (piastra cinescopio).
     Valore nero dei tre segnali catodici ca. 140-150V.

3. **Regolazione del canale colore**
   - Applicare un monoscopio PAL.
   - Regolare FK e H sul valore nominale, K al massimo.
   - Sull'integrato TDA 4555 collegare pin 28 a +12V.
   - Sull'integrato TDA 4555 collegare pin 17 a massa.
   - Con C9516 fermare le barre colorate scorrevoli.
   - Togliere i cortocircuiti.
   - Collegare la sonda a MP 12, con il regolatore BP e la bobina LZ portare a copertura le immagini doppie del segnale B.
   - Applicare un monoscopio SECAM.
   - Collegare la sonda al pin 1 dell'integrato TDA 4555, con la bobina DR portare la linea zero del segnale (R-Y) sul livello della frequenza di riga.
   - Collegare la sonda al pin 3 dell'integrato TDA 4555, con la bobina DB portare la linea zero del segnale (B-Y) sul livello della frequenza di riga.
   - La bobina F2581 applicarla cosi in modo che il segnale (B-Y) sia chiaro.

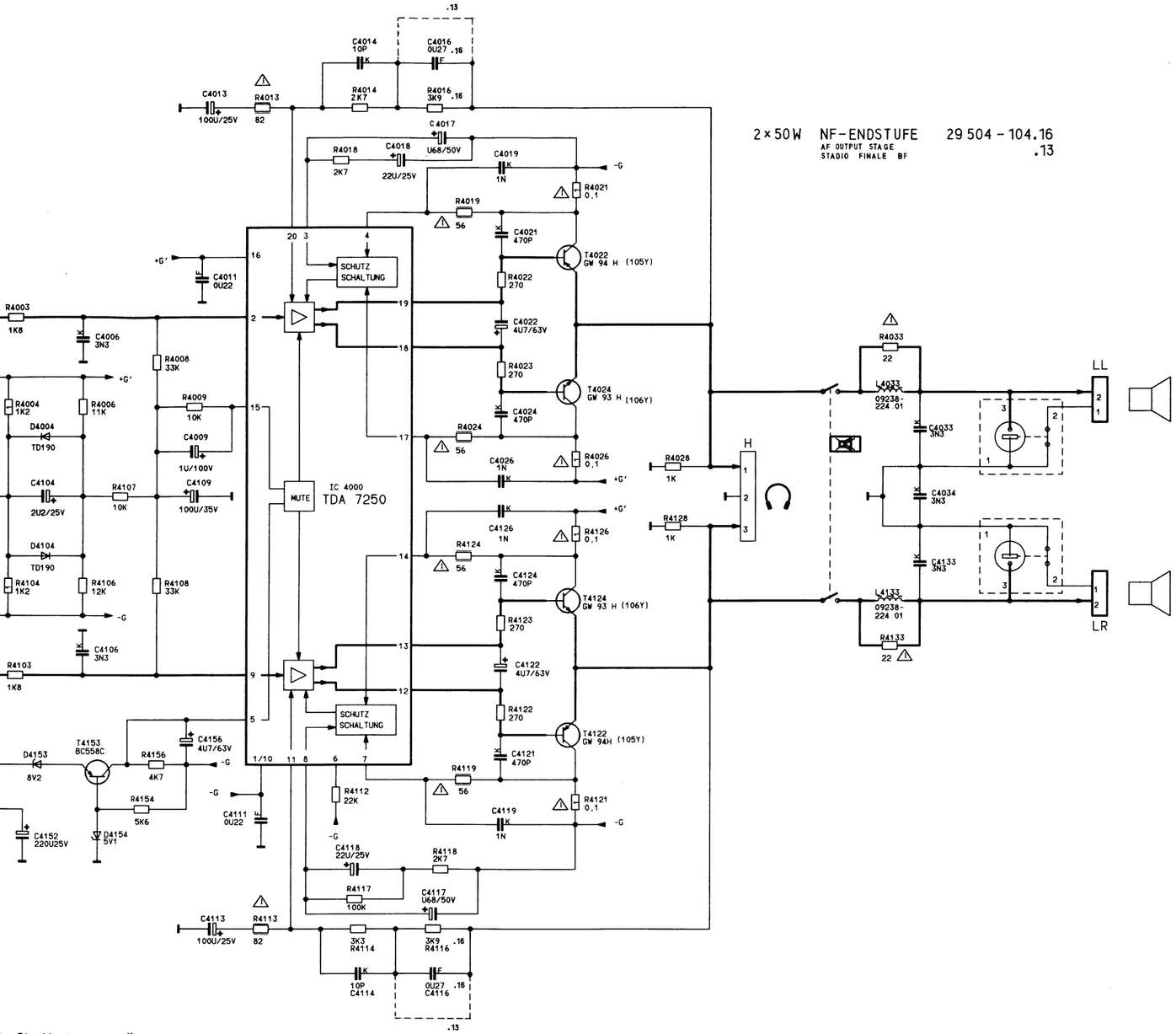
4. **Corrente catodica**
   - Il regolatore "SSB" viene regolato già in fabbrica su valori medi.
   - Se con il contrasto al massimo ed una regolazione normale della luminosità dovesse presentarsi una sfocalizzazione nei campi ultrabianchi del cinescopio (le lettere bianche al centro del cinescopio risultano molto sfuocate), agire sul regolatore "SSB" per mettere a fuoco i contorni delle lettere (riducendo la corrente catodica di picco).

ABLENKUNG 110 ° DEFLECTION / DEFLESSIONE
29504-107.55 30AX
.56 45AX
.57 VIDEO
.58 37"
.59 32"

| • | | R2743 | R2756 | R2758 | R2762 | R2770 | R2771 | C2772A | R2773 | C2774 | R2776 | C2776 | C2772 | C 2743 | R 2774 | R 2763 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -107.55 | | 470 | 1M | 200K | 330K | —•— | 1 | — | 200K | 2200U | 1 | 0,22U/MKS4 | 1U | 100U/50V | 330 | 2,2M |
| -107.56 | | 220 | 1M | 220K | 150K | 470 | 1 | — | 200K | 1000U | 1 | 0,22U/MKS4 | 1U | 100U/50V | 330 | 1,5M |
| -107.57 | | 270 | 470K | 180K | 200K | 470 | 1,5 | — | 180K | 2200U | 1,5 | 0,1U/MKS100 | 1U | 100U/50V | 330 | 2,2M |
| -107.58 | | 220 | 1M | 220K | 150K | 470 | 1 | — | 180K | 2200U | 1 | 0,12U/MKS4(100) | 0,82U | 470U/50V | 270 | 2,2M |
| -107.59 | | 220 | 1M | 270K | 150K | 470 | 1 | 0,47U | 180K | 1000U | 1 | 0,12U/MKS4(100) | 1U | 470U/50V | 270 | 2,2M |




**Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig**
**When replacing the plug-in board, no alignment is necessary**
**Non è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto**




**ler Steckkarte notwendig**
**ment is necessary**
**ttamento dopo la**



# Ersatzteilliste (Auszug) · List of Spare-Parts (extract) · Lista ricambi (estratto)

| Pos. No. | Fig. No. | Bestell-Nr. Part No./Ref. Nr. d'ordinazioni | | Benennung | Description | Denominazione |
|---|---|---|---|---|---|---|
| | | | | Steckkarten | Plug-in circuit boards | Schede |
| 1 | | 29504-101.01 | | Kabeltuner | Cable tuner | Tuner per TV cavo |
| 2 | | 29504-102.04 | | ZF-Verstärker lt. | IF-amplifier | FI-amplificatore |
| oder | | | | | or | oppure |
| 2 | | 29504-102.05 | | ZF-Verstärker lt. | IF-amplifier | FI-amplificatore |
| 2 | | 29504-162.06 | | ZF-Verstärker (72) | IF-amplifier (72) | FI-amplificatare (72) |
| oder | | | | | | |
| 2 | | 29504-162.02 | | ZF-Verstärker (Multi) | IF-amplifier (multi) | FI-amplificatore (multi) |
| 2 | | 29504-112.01 | | ZF-Verstärker (GB) | IF-amplifier (GB) | FI-amplificatore(GB) |
| 5 | | 29504-105.23 | | Farb/RGB (lt.) | Colour RGB | Colore RGB |
| 5 | | 29504-165.03 | | Farb/RGB (Multi) | Colour RGB (multi) | Colore/RGB(multi) |
| 7 | | 29504-107.56 | | Ablenkung | Deflection | Deflessione |
| 8 | | 29504-108.05 | | Videotext VT 3805 | Videotext VT 3805 | Televideo VT 3805 |
| 9 | | 29504-108.92 | | VT-Steckerplatte | Dummy plug - VT | Piastra spina televideo |
| | | | | Mechanische Teile | Mechanical parts | Parti meccaniche |
| 15 | | 29304-070.40 | | Bildrohrplatte kpl.72 | lt.icture tube plate (72) | Piastra cinescopio (72) |
| 15 | | 29304-070.45 | | Bildrohrplatte kpl. | Picture tube plate | Piastra cinescopio |
| 15.1 | | 29303-752.95 | | Bildrohrfassung | Picture tube socket | Zoccolo cinescopio |
| 15.2 | | 8104-982-014 | | Dämpfungsperle | Anti-vibration | Perlina ammortizz. |
| 16 | | 29700-284.01 | | Bausteinhalter | Module holder | Supporto modulo |
| 16 | | 29700-332.01 | | Bausteinhalter (VT) | Module holder (VT) | Supporto modulo (VT) |
| 16 | | 29700-277.01 | | Bausteinhalter (Multi) | Module holder (multi) | Supporto modulo (multi) |
| 16 | | 29700-317.01 | | Bausteinhalter | Module holder | Supporto modulo |
| 16 | | 29700-334.01 | | Bausteinhalter | Module holder | Supporto modulo |
| 17 | | 29700-350.01 | | Buchsenplatte (Aufn.) | Socket plate | Piastra presa |
| 18 | | 29500-807.01 | | Abdeckung (Ant.-Buchse) | Cover (ant.-socket) | Copertura (presa ant.) |
| 19 | | 09621-113.02 | 2x | Sicherungshalter | Fuse holder | Portafusibile |
| 20 | | 29303-153.12 | 3x | Montageclip für IC | Mounting clip for IC | Clip di montaggio p. IC |
| 21 | | 29303-153.02 | | Montageclip f. Trans. | Mounting clip f. Trans. | Clip di montaggio p.Trans. |
| 22 | | 29303-156.03 | | Isolierscheibe | Insulating washer | Rondella isolante |
| 23 | | 29303-156.01 | | Isolierscheibe | Insulating washer | Rondella isolante |
| 25 | | 29304-060.43 | | Euro-AV-Buchsenpl.(72) | Euro-AV-socket pl.(72) | Euro-AV-piastra presa (72) |
| 25 | | 29304-060.35 | | Euro-AV-Buchsenpl.kpl. | Euro-AV-socket plate | Euro-AV-piastra presa |
| 25.1 | | 29303-119.05 | | Peri-Buchse | Peri-socket | Presa Peri |
| 25.2 | | 29303-119.07 | | Peri-Buchse (Vid.6-pol) | Peri-socket (vid.6-pol.) | Presa peri (Vide.6-pol.) |
| 25.3 | | 27511-403.00 | | Mehrfachbuchse (Video) | Multiple socket | Presa multipla |
| 25.4 | | 29303-168.21 | 2x | Cinch-Buchse | Cinch socket | Presa cinch |
| 26 | | 29500-503.05 | | Abdeckung | Cover | Copertura |
| 27 | | 29305-008.12 | | Cinch-Buchsenplatte | Cinch socket plate | Presa cinch piastra |
| 30 | | 29303-364.01 | | Tuneraufnahme | Tuner holder | Supporto tuner |
| 31 | | 29700-282.01 | | Kabelhalter | Cable clamp | Supporto cavo |
| 32 | | 29703-340.01 | 2x | Schiebeschalter | Slider switch | Interruttore a cursore |
| 34 | | 29700-283.01 | | Kabelhalter (f. Röder Kaskade) | Cable clamp (EHT-tripler Röder) | Supporto cavo (p. Molt.EAT Röder) |
| oder | | | | | or | oppure |
| 34 | | 29700-324.01 | | Kabelhalter (f. Siemens Kaskade) | Cable clamp (EHT-tripler Siemens) | Supporto cavo (p. Molt. EAT Siemens) |
| | | | | Elektrische Teile | Electrical parts | Parti elettriche |
| K 536 | | 8324-800-040 | | Kaskade BG2087/642-1006 (Röderstein) | Kascade BG 2087/642-1006 (Röderstein) | Moltiplicatore in cascate BG 2087/642-1006 (Röderstein) |
| oder | | | | | or | oppure |
| | | | | B 9245-S 8154-M 473 (Siemens) | B 9245-S 8154-M 473 (Siemens) | B 9245-S 8154-M 473 (Siemens) |

# Ersatzteilliste (Auszug) · List of Spare-Parts (extract) · Lista ricambi (estratto)

| Pos. No. | Fig. No. | Bestell-Nr. Part No. Réf. Nr. d'ordinazioni | Benennung Description Désignation Denominazione |
|---|---|---|---|
| | | | |
| TR526 | | 29201-025.01 | (!) |
| TR526 | | 29201-019.10 | (!) |
| TR651 | | 29500-609.22 | (!) |
| TR651 | | 29500-609.39 | (!) |
| | | | |
| L336 | | 8140-526-451 | |
| L337 | | 8140-526-451 | |
| L351 | | 09240-113.21 | |
| L355 | | 8140-525-969 | |
| L503 | | 29500-804.07 | |
| L507 | | 8140-525-950 | |
| L514 | | 29500-804.08 | |
| L521 | | 29203-118.97 | |
| L526 | | 09240-110.21 | |
| L562 | | 09245-405.08 | |
| L571 | | 29500-804.07 | |
| L572 | | 29500-804.08 | |
| L573 | | 09246-846.24 | |
| L631 | | 29500-804.06 | |
| L633 | | 8140-525-266 | |
| L634 | | 09278-309.01 | |
| L672 | | 8140-526-320 | |
| | | | |
| IC200 | | 8305-201-953 | CD 4053 BE (MOS) |
| IC230 | | 8305-201-953 | CD 4053 BE (MOS) |
| IC240 | | 8305-201-953 | CD 4053 BE (MOS) |
| IC250 | | 8305-293-559 | RC 4559 NB |
| IC260 | | 8305-201-953 | CD 4053 BE (MOS) |
| IC270 | | 8305-362-014 | TEA 2014 |
| IC280 | | 8305-201-953 | CD 4053 BE (MOS) |
| IC280 | | 8305-293-559 | RC 4559 NB (!) |
| IC350 | | 8305-338-442 | TDA 8442 (MOS) |
| IC550 | | 8305-338-145 | TDA 8145 |
| IC550 | | 8305-338-140 | TDA 8140 |
| IC 555 | | 8305-302-497 | TDA 4950 |
| IC 555 | | 8305-338-145 | TDA 8145 |
| IC 631 | | 8305-302-461 | TDA 4600-2 |
| IC 631 | | 8305-302-459 | TDA 4601 |
| IC 656 | | 8305-204-317 | LM 317 T |
| IC 666 | | 8305-205-765 | 7812/3% |
| IC 676 | | 8305-205-701 | 78 M 05 |
| | | | |
| T 111 | | 8302-202-543 | BC 548 B |
| T 201 | | 8303-207-548 | BC 548 C |
| T 202 | | 8303-207-548 | BC 548 C |
| T 217 | | 8303-275-338 | BC 338-40 |
| T 223 | | 8303-274-338 | BC 338-40 |
| T 271 | | 8302-200-171 | BC 338-40 |
| T 321 | | 8303-204-558 | BC 558 B |
| T 501 | | 8303-200-548 | BC 548 |
| T 502 | | 8303-200-548 | BC 548 |
| T 531 | | 8303-400-299 | BF 299 |
| T 572 | | 8302-260-506 | BU 508 A |

| Pos. No. | Fig. No. | Bestell-Nr. Part No. Réf. Nr. d'ordinazioni | Benennung Description Désignation Denominazione |
|---|---|---|---|
| T 634 | | 8302-260-903 | BU 903 |
| T 634 | | 8302-260-208 | BU 208A/BU 546 |
| T 687 | | 8302-218-053 | BDX 53 A |
| T 691 | | 8303-270-337 | BC 337-16 |
| T 692 | | 8303-270-337 | BC 337-16 |
| T 693 | | 8303-270-337 | BC 337-16 |
| T 736 | | 8302-411-759 | GF 759 |
| T 737 | | 8303-206-558 | BC 558 C |
| T 742 | | 8303-401-422 | BF 422 |
| T 746 | | 8303-406-421 | BF 421 |
| T 756 | | 8302-411-759 | GF 759 |
| T 762 | | 8303-401-422 | BF 422 |
| T 766 | | 8303-406-421 | BF 421 |
| T 776 | | 8302-411-759 | GF 759 |
| T 782 | | 8303-401-422 | BF 422 |
| T 786 | | 8303-406-421 | BF 421 |
| | | | |
| D 201 | | 8309-214-114 | TD 129 |
| D 202 | | 8309-215-021 | 1 N 4001 |
| D 281 | | 8309-214-114 | TD 129 |
| D 282 | | 8309-214-114 | TD 129 |
| D 283 | | 8309-214-218 | TD 129 |
| D 286 | | 8309-198-042 | BAT 42 |
| D 287 | | 8309-214-218 | TD 129 |
| D 288 | | 8309-198-042 | BAT 42 |
| D 298 | | 8309-214-018 | TD 190 |
| D 292 | | 8309-214-018 | TD 190 |
| D 321 | | 8309-214-010 | TD 129 |
| D 322 | | 8309-214-010 | TD 129 |
| D 331 | | 8309-720-056 | ZPD 5,6 |
| D 333 | | 8309-201-103 | BA 157 |
| D 337 | | 8309-215-127 | 1 N 4007 |
| D 351 | | 8309-214-018 | TD 190 |
| D 504 | | 8309-215-020 | 1 N 4004 |
| D 506 | | 8309-201-103 | BA 157 |
| D 510 | | 8309-709-200 | ZY 200 |
| D 513 | | 8309-707-532 | ZPD 6,8 |
| D 515 | | 8309-214-018 | TD 190 |
| D 520 | | 8309-201-103 | BA 157 |
| D 521 | | 8309-201-103 | BA 157 |
| D 529 | | 8309-204-268 | BYV 16 |
| D 534 | | 8309-215-020 | 1 N 4004 |
| D 541 | | 8309-200-021 | BAV 21 |
| D 543 | | 8309-215-045 | 1 N 4148 |
| D 544 | | 8309-215-045 | 1 N 4148 |
| D 554 | | 8309-215-045 | 1 N 4148 |
| D 562 | | 8309-707-035 | ZPD 30 |
| D 571 | | 8309-204-228 | BY 228 |
| D 572 | | 8309-210-144 | SKE 4 G 2/06 |
| D 616 | | 8309-215-127 | 1 N 4007 |
| D 621 | | 8308-560-384 | SKB 380/C 1500/LB 5 |
| D 633 | | 8309-517-033 | BYW 32 |
| D 634 | | 8309-215-127 | 1 N 4007 |
| D 635 | | 8309-215-127 | 1 N 4007 |
| D 636 | | 8309-204-268 | BYV 16 |
| D 647 | | 8309-517-033 | BYW 32 |
| D 648 | | 8309-517-033 | BYW 32 |



| Pos. No. | Fig. No. | Bestell-Nr. Part No. Réf. Nr. d'ordinazioni | Benennung Description Désignation Denominazione |
|---|---|---|---|
| D 656 | | 8309-517-077 | BYW 76 |
| D 661 | | 8309-517-073 | BYW 72 |
| D 671 | | 8309-517-074 | BYW 72 |
| D 681 | | 8309-712-822 | MR 824-400 |
| D 687 | | 8309-215-028 | 1 N 4002 |
| D 708 | | 8309-707-012 | ZPD 4,7 |
| D 737 | | 8309-215-045 | 1 N 4148 |
| D 741 | | 8309-215-045 | 1 N 4148 |
| D 743 | | 8309-215-045 | 1 N 4148 |
| D 746 | | 8309-214-030 | TD 190 |
| D 761 | | 8309-215-045 | 1 N 4148 |
| D 763 | | 8309-215-045 | 1 N 4148 |
| D 766 | | 8309-214-030 | TD 190 |
| D 781 | | 8309-215-045 | 1 N 4148 |
| D 783 | | 8309-215-045 | 1 N 4148 |
| D 786 | | 8309-214-030 | TD 190 |
| | | | |
| C 511 | | 8515-911-114 | 9000pF/1600 V (!) |
| C 512 | | 8515-911-424 | 0,027uF/400 V (!) |
| C 513 | | 8515-942-131 | 1800pF/100 V (!) |
| C 514 | | 8515-911-001 | 150pF/1600 V (!) |
| C 516 | | 8525-040-819 | 0,33uF/250 V (!) |
| C 517 | | 8525-040-819 | 0,33uF/250 V (!) |
| C 521 | | 8515-722-242 | 0,33uF/160 V (!) |
| C 521 | | 8515-722-231 | 0,22uF/160 V (!) |
| C 522 | | 8515-722-231 | 0,26uF/160 V (!) |
| C 528 | | 8563-731-622 | 0,022uF/1000 V |
| C 529 | | 8650-090-477 | 270pF/2 KV |
| C 530 | | 8660-097-219 | 220pF (!) |
| C 531 | | 8563-731-622 | 0,022uF/1000 V |
| C 537 | | 8563-720-206 | 0,068uF/100 V (!) |
| C 573 | | 8515-721-240 | 0,36uF/250 V (!) |
| C 611 | | 8660-097-241 | 3300pF |
| C 613 | | 8660-097-241 | 3300pF |
| C 621 | | 8650-081-125 | 1000pF/1 KV |
| C 622 | | 8650-081-125 | 1000pF/1 KV |
| C 623 | | 8650-081-125 | 1000pF/1 KV |
| C 624 | | 8650-081-125 | 1000pF/1 KV |
| C 634 | | 8515-911-633 | 3300pF/2000 V (!) |
| C 634 | | 8515-911-640 | 4700pF/2000 V (!) |
| C 644 | | 8520-601-563 | 5600pF/400 V |
| C 646 | | 8525-033-487 | 8200pF/400 V |
| C 648 | | 8563-731-418 | 0,22uF/250 V |
| C 658 | | 8415-166-147 | 1000uF/25 V |
| C 661 | | 8650-081-111 | 270pF/2 KV |
| C 668 | | 8452-996-147 | 1000uF/25 V |
| C 671 | | 8650-081-111 | 270pF/2 KV |
| C 681 | | 8650-081-111 | 270 pF/2 KV |
| C 691 | | 8650-081-111 | 270 pF/2 KV |
| C 722 | | 8563-731-655 | 0,15uF/1000 V (!) |
| C 727 | | 8650-131-012 | 150pF/2 KV |
| | | | |
| R 337 | | 8705-269-105 | 22 kOhm |
| R 337 | | 8705-269-301 | 15 kOhm |
| R 513 | | 8700-249-083 | 2,7 kOhm NB (!) |
| R 520 | | 8781-430-058 | 250 Ohm |

| Pos. No. | Fig. No. | Bestell-Nr. Part No. Réf. Nr. d'ordinazioni | Benennung Description Désignation Denominazione |
|---|---|---|---|
| R 521 | | 8730-149-253 | 150 Ohm |
| R 522 | | 8700-329-025 | 10 Ohm NB (!) |
| R 523 | | 8705-221-271 | 820 Ohm (!) |
| R 524 | | 8766-397-017 | 4,7 Ohm (!) |
| R 525 | | 8735-003-033 | 0,33 Ohm (!) |
| R 526 | | 8311-201-073 | PTC 2 G P 2390- J 146 (!) |
| R 527 | | 8730-179-221 | 7W/6,8 Ohm |
| R 528 | | 8705-221-225 | 10 Ohm (!) |
| R 533 | | 8700-007-473 | 1 kOhm (!) |
| R 535 | | 8765-044-121 | 100 kOhm |
| R 550 | | 8765-097-997 | 0,68 Ohm |
| R 554 | | 8790-047-135 | 1 kOhm |
| R 558 | | 8700-007-449 | 100 Ohm |
| R 561 | | 8790-047-164 | 100 kOhm |
| R 571 | | 8701-230-817 | 4,7 Ohm (!) |
| R 573 | | 8730-018-979 | 0,12 Ohm |
| R 574 | | 8705-369-229 | 15 Ohm |
| R 574 | | 8705-369-027 | 12 Ohm |
| R 616 | | 8705-321-083 | 2,7 kOhm |
| R 617 | | 8311-201-462 | PTC 1 G Q 63100-P 2462-J 2 |
| R 621 | | 8730-199-016 | 11 W/ 4,3 Ohm |
| R 623 | | 8311-400-125 | VZA 275 (!) |
| R 624 | | 8718-250-158 | 3,6 MOhm VDE (!) |
| R 626 | | 8705-369-325 | 150 kOhm |
| R 627 | | 8718-250-014 | 4,7 MOhm VDE (!) |
| R 631 | | 8766-326-993 | 0,47 Ohm |
| R 633 | | 8766-327-035 | 27 Ohm |
| R 636 | | 8750-210-049 | 7W/100 Ohm |
| R 636 | | 8730-179-041 | 47 Ohm |
| R 647 | | 8796-101-142 | 2,2 kOhm |
| R 647 | | 8796-101-143 | 2,5 kOhm |
| R 648 | | 8750-210-049 | 7W/100 Ohm |
| R 661 | | 8735-003-022 | 0,22 Ohm (!) |
| R 671 | | 8735-003-022 | 0,22 Ohm (!) |
| R 681 | | 8735-002-022 | 0,22 Ohm (!) |
| R 686 | | 8700-007-441 | 47 Ohm (!) |
| R 688 | | 8705-269-109 | 33 kOhm |
| R 690 | | 8730-252-001 | 5,5 W/1 Ohm |
| R 690 | | 8730-271-215 | 3,9 Ohm (!) |
| R 704 | | 8705-269-021 | 6,8 Ohm (!) |
| R 721 | | 8700-051-073 | 100 kOhm (!) |
| R 724 | | 8797-215-674 | 470 kOhm |
| R 734 | | 8705-329-113 | 47 kOhm |
| R 741 | | 8705-369-103 | 18 kOhm |
| R 742 | | 8700-201-069 | 680 Ohm NB (!) |
| R 751 | | 8790-047-135 | 1 kOhm |
| R 754 | | 8705-329-113 | 47 kOhm |
| R 761 | | 8705-369-103 | 18 kOhm |
| R 762 | | 8700-201-069 | 680 Ohm NB (!) |
| R 771 | | 8790-047-135 | 1 kOhm |
| R 774 | | 8705-329-113 | 47 kOhm |
| R 781 | | 8705-369-103 | 18 kOhm |
| R 782 | | 8700-201-069 | 680 Ohm Nb (!) |
| | | | |
| SI 644 | | 8315-618-002 | 1,25 A/T (!) |

Ohm
hm NB (!)
Ohm (!)
Ohm (!)
Ohm (!)
2 G P 2390- J 146 (!)
,8 Ohm
hm (!)
hm (!)
kOhm
Ohm
hm
Ohm
kOhm
Ohm (!)
Ohm
hm
hm
kOhm
G Q 63100-P 2462-J 2
4,3 Ohm
75 (!)
Ohm VDE (!)
Ohm
Ohm VDE (!)
Ohm
m
0 Ohm
m
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0 Ohm
Ohm (!)
Ohm (!)
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/1 Ohm
hm (!)
hm (!)
Ohm (!)
Ohm
hm
hm
hm NB (!)
m
hm
hm
hm NB (!)
m
hm
hm
nm Nb (!)

A/T (!)



## Funktionsbeschreibung des Schaltnetzteils

Aus der Netzspannung wird durch den Brückengleichrichter D 621 eine positive Gleichspannung von ca. +300 V gewonnen. Über die Primärwicklung des Netztrafos TR 651 - Anschlüsse 5 und 1 - liegt der Hochvolt-Schalttransistor T 634 an dieser Gleichspannung.

Die integrierte Schaltung IC 631 (TDA 4601) - sie übernimmt die Ansteuerung, Regelung und Überwachung des Schalt-Transistors T 634 - gibt an Pin 7 eine Rechteckspannung von ca. 2,5 $V_{ss}$ über C 631 und L 633 an die Basis des Schalttransistors T 634.

Die Sekundärseite des Netzteils liefert die für die einzelnen Funktionsgruppen notwendigen Versorgungsspannungen. Diese sind vom Netz getrennt.

Während der Leitphase des Transistors T 634 fließt ein linearansteigender Strom durch die Primärwicklung. Der sich aufbauende magnetische Fluß induziert auch in der Sekundärwicklung eine Spannung, die jedoch so gerichtet ist, daß die Gleichrichter sperren; d.h. die gesamte magnetische Energie befindet sich im Trafo.

Sobald der Transistor T 634 sperrt, nimmt der magnetische Fluß ab, in den Sekundärwicklungen werden Spannungen induziert, deren Strom über die jetzt leitenden Dioden die Lastkreise mit Energie versorgt. Da nur während der Sperrphase des Transistors T 634 Energie in die Lastkreise übertragen wird, nennt man diese Version »Sperrwandler-Netzteil«. Die Schaltfrequenz des Transistors liegt je nach Last zwischen 15 und 70 kHz. Die größte Stromflußzeit und damit die höchste Leitungsübertragung wird bei niedriger Frequenz und geringem Tastverhältnis erreicht. Normale Betriebswerte sind etwa 30 kHz bei einem Tastverhältnis von 3:1.

**Anlaufschaltung:**

Die Anlaufspannung für den TDA 4601 wird über die Diode D 616, den PTC R 617 und den Widerstand R 616 an den Pin 9 (IC 631) geleitet (Anlaufspannung ca. 12 V). Nach dem Anlaufen des Sperrwandlers übernimmt die Diode D 633 die Spannungsversorgung. An Pin 9 stellt sich eine Spannung von ca. 12,5 V ein.

**Normalbetrieb:**

Am Eingang Pin 2 des TDA 4601 werden die Nulldurchgänge der von der Rückkoppelspule eingespeisten Frequenzen registriert und an eine interne Steuerlogik weitergegeben. Den Pin 3, einem Regeleingang, werden die gleichgerichteten Amplitudenänderungen der Rückkoppelspule (11/13) über den Einsteller R 647 zugeführt.

Das Schaltnetzteil ermöglicht folgende Betriebszustände

a) Normalbetrieb
alle Versorgungsspannungen stehen zur Verfügung.

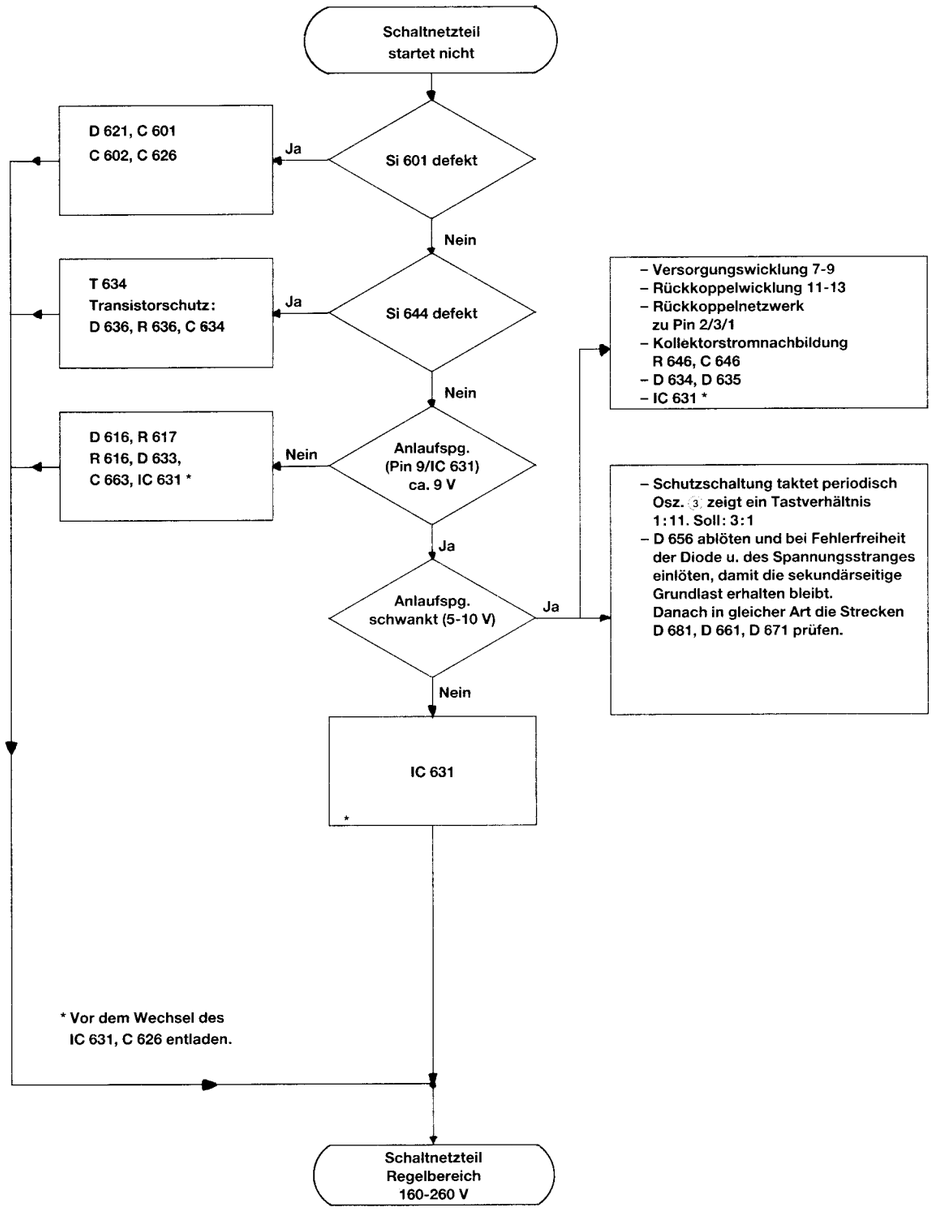
b) Fernsehtonwiedergabe über HiFi-Anlage
T 693 leitet, T 687 ist gesperrt und somit ist keine +G/–G-Spannung an der NF-Endstufe vorhanden.

**T 693 wird gegen Masse geschaltet, dadurch geht die NF - Steckkarte in Stand by.**





## Tips zur Fehlersuche – Primärseite liegt an Netzpotential. Gerät mit Netztrenntransformator betreiben !


Schaltnetzteil startet nicht
Si 601 defekt
Ja
D 621, C 601
C 602, C 626
Nein
Si 644 defekt
Ja
T 634
Transistorschutz:
D 636, R 636, C 634
Nein
Anlaufspg. (Pin 9/IC 631) ca. 9 V
Nein
D 616, R 617
R 616, D 633,
C 663, IC 631 *
Ja
Anlaufspg. schwankt (5-10 V)
Ja
Nein
IC 631
*
– Versorgungswicklung 7-9
– Rückkoppelwicklung 11-13
– Rückkoppelnetzwerk zu Pin 2/3/1
– Kollektorstromnachbildung R 646, C 646
– D 634, D 635
– IC 631 *
– Schutzschaltung taktet periodisch Osz. 3 zeigt ein Tastverhältnis 1:11. Soll: 3:1
– D 656 ablöten und bei Fehlerfreiheit der Diode u. des Spannungsstranges einlöten, damit die sekundärseitige Grundlast erhalten bleibt.
Danach in gleicher Art die Strecken D 681, D 661, D 671 prüfen.
* Vor dem Wechsel des IC 631, C 626 entladen.
Schaltnetzteil Regelbereich 160-260 V

GB

## Circuit description of the switched mode power supply stage

A positive DC voltage of approximately 300 V is obtained via the bridge rectifier D 621 from the mains supply. This DC voltage is applied to the high voltage switching transistor T 634 via the primary winding of the mains transformer TR 651 from connections 5 and 1.

The integrated circuit IC 631 (TDA 4601) - which carries out the functions of drive, control and monitoring the switching transistor T 634 - provides on pin 7 a rectangular voltage of 2.5 $V_{pp}$ approximately via C 631 and L 633 to the base of the switching transistor T 634.

The secondary side of the power supply stage provides the supply voltages required by the individual function groups. These are isolated from the mains.

During the conduction phase of the transistor T 634 a linear rising current flows through the primary winding. The magnetic flux which builds up, induces a voltage into the secondary winding in a direction to cause the rectifiers to be reverse biased; this means that the total magnetic energy is stored in the transformer.

When the transistor T 634 switches off, the magnetic flux decreases and a voltage is induced in the secondary windings causing current to flow via the now conducting diodes to the load circuits which are supplied with energy. As the energy is transferred into the load circuits during the switched off phase of the transistor T 634, this type of circuit is called "B.O.-type Converter Power Supply Stage". The switching frequency of the transistor lies between 15 and 70 kHz depending on the load. The largest current flowing time and with it the highest power transfer occurs with the lowest frequency and lowest mark-to-space ratio. In normal operating values this is approximately 30 kHz with a mark-to-space ratio of 3 : 1.

### Start up Circuit

The starting voltage (approx. 12 V) for the TDA 4601 is provided via diode D 616, the PTC R 617 and the resistor R 616 to pin 9 (IC 631). After the B.O.-type converter has started up, the supply voltage is derived via D 633. On pin 9 the voltage of 12.5 V approx. builds up.

### Normal Operation

On the input to pin 2 of the TDA 4601, the zero transitions from the feedback windings are registered as input frequencies and are fed to an internal control logic. To pin 3, a control input, is fed the rectified amplitude changes sensed in the feedback winding (11/13) via the adjustable pre-set R 647.

The Switched Mode Power Supply Circuit produces the following operating modes:

a) Normal operation
All supply voltages are produced.

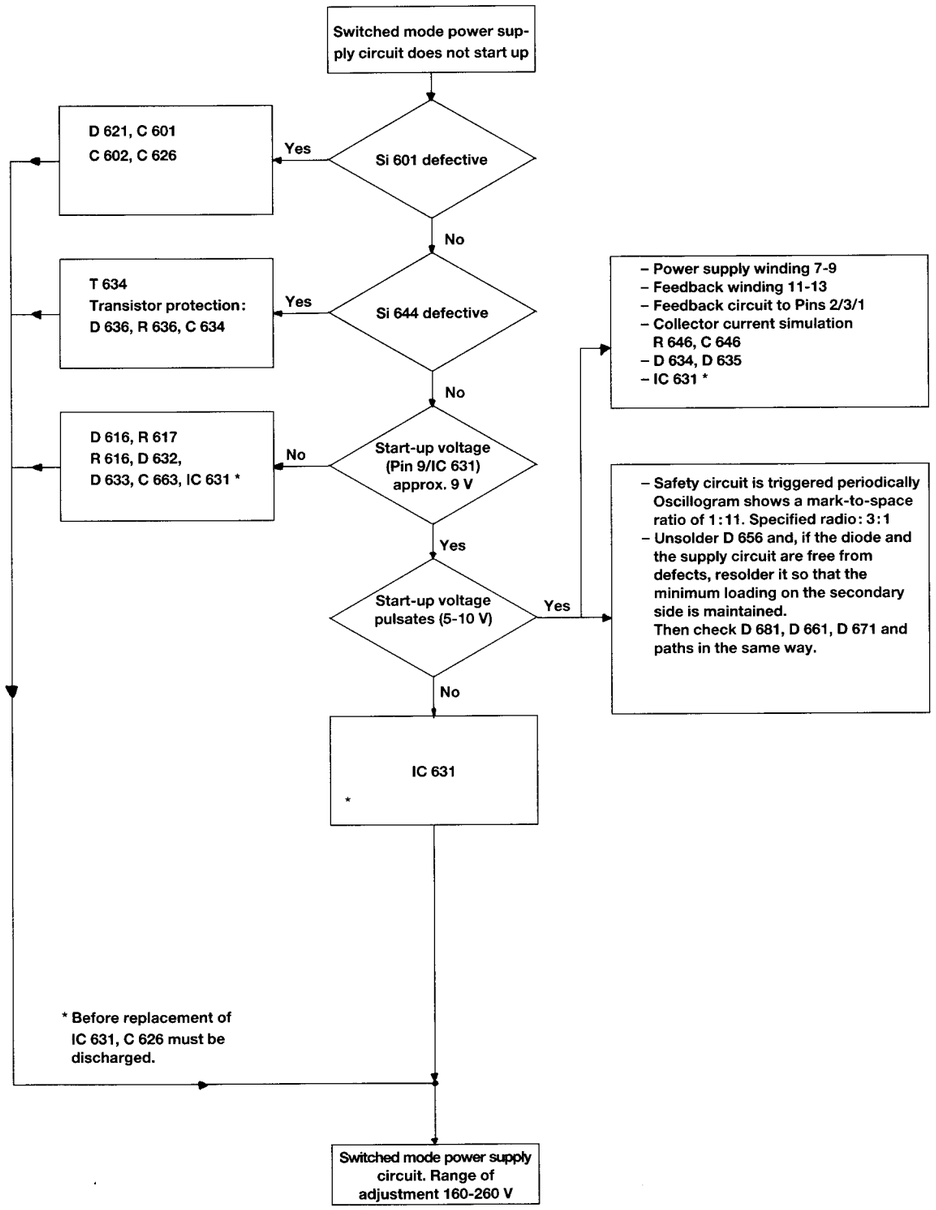
b) TV sound reproduction via HiFi system
T 693 conducts, T 687 is cut off and the + G/– G voltage for the AF output stage is not provided.

**T 693 is connected to chassis so that the AF plug - in board changes to stand by.**



GB

## Tips for Fault location – Primary side is normally not isolated. Operate set with mains isolating transformer !


Switched mode power supply circuit does not start up
Si 601 defective
Yes
D 621, C 601
C 602, C 626
No
Si 644 defective
Yes
T 634
Transistor protection:
D 636, R 636, C 634
No
– Power supply winding 7-9
– Feedback winding 11-13
– Feedback circuit to Pins 2/3/1
– Collector current simulation
R 646, C 646
– D 634, D 635
– IC 631 *
Start-up voltage (Pin 9/IC 631) approx. 9 V
No
D 616, R 617
R 616, D 632,
D 633, C 663, IC 631 *
Yes
Start-up voltage pulsates (5-10 V)
Yes
– Safety circuit is triggered periodically Oscillogram shows a mark-to-space ratio of 1:11. Specified radio: 3:1
– Unsolder D 656 and, if the diode and the supply circuit are free from defects, resolder it so that the minimum loading on the secondary side is maintained.
Then check D 681, D 661, D 671 and paths in the same way.
No
IC 631
*
* Before replacement of IC 631, C 626 must be discharged.
Switched mode power supply circuit. Range of adjustment 160-260 V

(I)

## Descrizione circuitale dell'alimentatore a commutazione

Dalla tensione di rete viene ricavata una tensione continua positiva di ca. + 300 V mediante il raddrizzatore a ponte D 621. Attraverso l'avvolgimento primario del trasformatore di rete TR 651 (collegamenti 5 e 1) questa tensione continua viene applicata al transistor di commutazione T 634.

Il circuito integrato IC 631 (TDA 4601) che effettua il pilotaggio, la regolazione ed il controllo del transistor T 634, invia una tensione rettangolare di ca. 2,5 $V_{pp}$ al pin 7 e attraverso C 631 e L 633 alla base del transistor T 634.

Il lato secondario dell'alimentatore fornisce le tensioni di alimentazione necessarie ai singoli gruppi di funzioni. Questi sono separati dalla rete.

Durante la fase di conduzione del transistor T 634, nell'avvolgimento primario scorre una corrente che aumenta linearmente. Il flusso magnetico che si ottiene induce anche nell'avvolgimento secondario una tensione così conformata da bloccare i raddrizzatori; ciò significa che tutta l'energia magnetica si trova nel trasformatore.

Appena che il transistor T 634 si blocca, il flusso magnetico diminuisce; negli avvolgimenti secondari vengono indotte correnti che attraverso i diodi ora conduttivi alimentano il carico. Poichè soltanto durante la fase di interdizione del transistor T 634 viene trasmessa energia nel carico, questo concetto viene denominato «alimentatore con convertitore ad interdizione». La frequenza di commutazione del transistor è compresa a seconda del carico tra 15 e 70 kHz. La maggiore corrente e quindi il massimo trasferimento di potenza si ot - tengono alla più bassa frequenza e con basso rapporto di cadenza.

I normali valori di funzionamento si aggirano attorno ai 30 kHz con un rapporto di cadenza di 3 : 1.

**Circuito di spunto:**

La tensione di spunto per il TDA 4601 giunge al pin 9 (IC 631) attraverso il diodo D 616, il PTC R 617 e la resistenza R 616 (tensione di spunto ca. 12 V). Dopo l'innesco del convertitore ad interdizione, il diodo D 633 riceve la tensione d'alimentazione. Al pin 9 si forma una tensione di ca. 12,5 V.

**Funzionamento normale:**

All'ingresso, pin 2 del TDA 4601, vengono registrati i passaggi per lo zero delle funzioni derivate dalla bobina di reazione e condotti ad una logica di comando interna. Al pin 3 (ingresso di regolazione) vengono applicate attraverso il regolatore R 647 le variazioni di ampiezza raddrizzate della bobina di reazione (11/13).

L'alimentatore a commutazione consente i seguenti funzionamenti

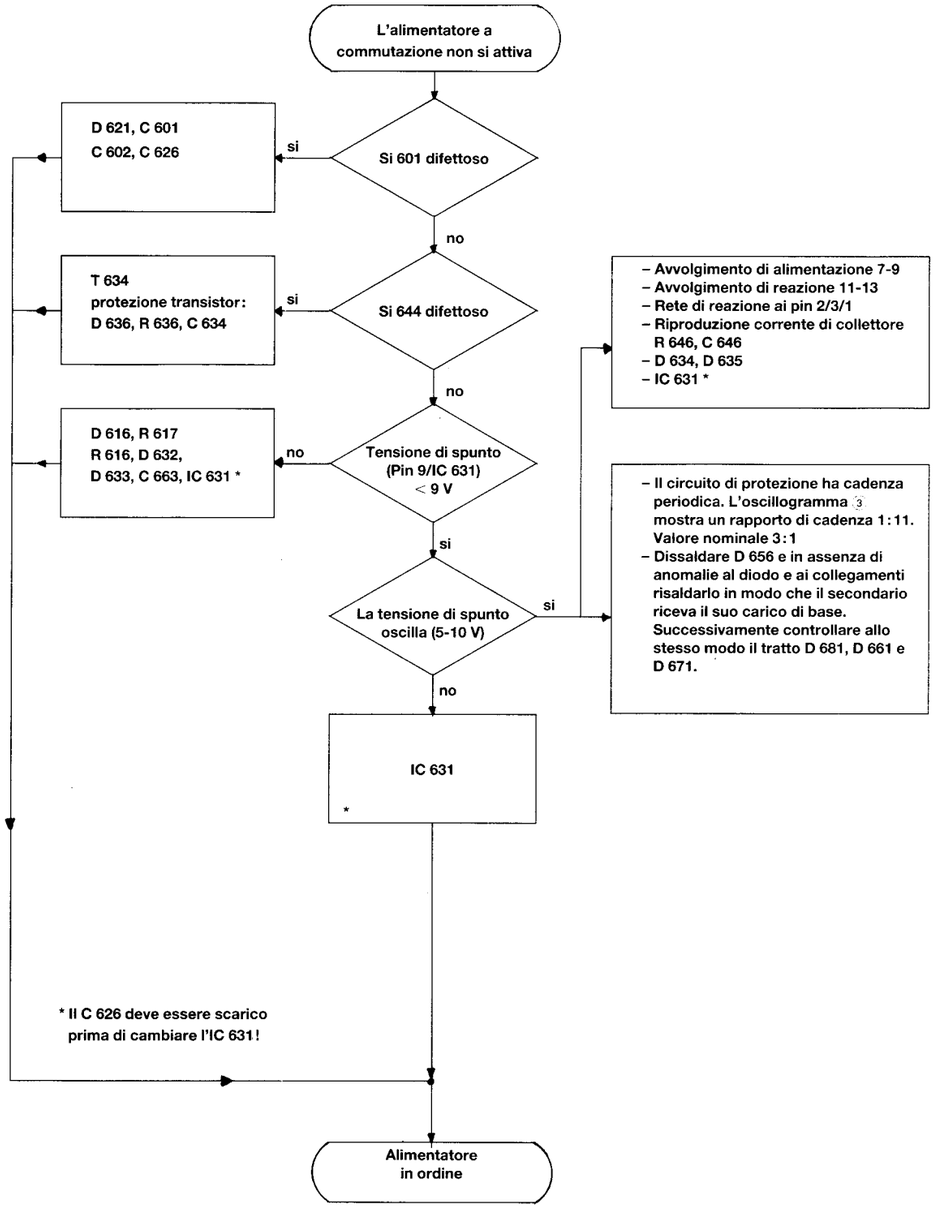
a) normale
   tutte le tensioni di alimentazione sono disponibili.

b) riproduzione dell'audio televisivo tramite impianto HiFi T 693 conduce, T 687 è bloccato e quindi la tensione + G/– G non è presente nello stadio finale BF.
   **Il T 693 viene commutato a massa, portando così la scheda innesto BF in Stand - by.**



(I)

## Suggerinenti per la ricerca guasti – Lato del primario collegato a potenziale di rete – Far funzionare l'apparecchio con un trasformatore separatore di rete


L'alimentatore a commutazione non si attiva
Si 601 difettoso
si
D 621, C 601
C 602, C 626
no
Si 644 difettoso
si
T 634
protezione transistor:
D 636, R 636, C 634
– Avvolgimento di alimentazione 7-9
– Avvolgimento di reazione 11-13
– Rete di reazione ai pin 2/3/1
– Riproduzione corrente di collettore R 646, C 646
– D 634, D 635
– IC 631 *
no
Tensione di spunto (Pin 9/IC 631) < 9 V
no
D 616, R 617
R 616, D 632,
D 633, C 663, IC 631 *
si
La tensione di spunto oscilla (5-10 V)
si
– Il circuito di protezione ha cadenza periodica. L'oscillogramma 3 mostra un rapporto di cadenza 1 : 11. Valore nominale 3 : 1
– Dissaldare D 656 e in assenza di anomalie al diodo e ai collegamenti risaldarlo in modo che il secondario riceva il suo carico di base. Successivamente controllare allo stesso modo il tratto D 681, D 661 e D 671.
no
IC 631
*
* Il C 626 deve essere scarico prima di cambiare l'IC 631!
Alimentatore in ordine